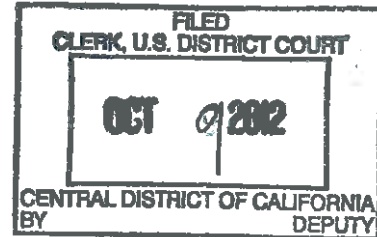


COPY

1 ALAN SEGE, ESQ. PC
2 Alan Sege (Bar No. 177350)
3 alan.sege@gmail.com
4 6601 Center Drive W, Suite 700
5 Los Angeles, California 90045
6 Telephone: (310) 957-3301
7 Facsimile: (310) 861-1140
8 Attorney for Plaintiff
9 m-QUBE, INC.



10 UNITED STATES DISTRICT COURT
11 CENTRAL DISTRICT OF CALIFORNIA

12 m-QUBE, Inc., a Delaware
13 Corporation,

14 Plaintiff,

15 v.

16 Delta Airlines, Inc., a Delaware
17 Corporation,

18 Defendant.

CASE NO. 08624 (AS (NANX))

COMPLAINT FOR PATENT
INFRINGEMENT

DEMAND FOR JURY TRIAL

19 Plaintiff, m-Qube, Inc., ("Plaintiff" or "m-Qube"), by and through
20 its undersigned counsel, files this Complaint against Delta Airlines, Inc. ("Delta" or
21 "Defendant") for infringement of United States Patent Nos. 7,403,788 ("the '788
22 Patent"), 7,792,518 ("the '518 Patent"), and 8,131,262 ("the '262 Patent")
23 (collectively, the "patents-in-suit") pursuant to 35 U.S.C. § 100 *et seq.* as follows:

24 THE PARTIES

25 1. Plaintiff m-Qube, Inc. is a corporation organized under the laws of the
26 State of Delaware, having a principal place of business at 6601 Center Drive West,
27 Suite 700, Los Angeles, CA.

28 2. On information and belief, Defendant Delta Airlines, Inc. is a Delaware

1 corporation, having a principal place of business at 1030 Delta Boulevard, Atlanta,
2 Georgia 30320. Delta may be served with process via its registered agent, the
3 Corporation Services Company, 2711 Centerville Road, Suite 400, Wilmington,
4 Delaware 19808.

5 JURISDICTION AND VENUE

6 3. This is a civil action for patent infringement arising under the United
7 States patent statutes, 35 U.S.C. § 100 *et seq.* This Court has jurisdiction over the
8 subject matter of this action under 28 U.S.C. §§ 1331 and 1338(a). Venue is proper
9 in this judicial district under 28 U.S.C. §§ 1391 and 1400(b).

10 4. Delta is subject to this Court's personal jurisdiction because it has
11 conducted and does conduct business within the State of California and in this
12 Judicial District. Delta, directly or through intermediaries (including partners,
13 subsidiaries and others), makes, distributes, offers for sale, sells, advertises, or uses
14 its products and services in the United States, including in the State of California
15 and in this Judicial District. Delta (directly or through intermediaries) has
16 purposefully and voluntarily placed one or more of its infringing products or
17 services, as described below in Counts I, II and III, into the stream of commerce
18 with the expectation that the infringing products and services will be used in the
19 State of California and in this Judicial District. These infringing products and
20 services have been and continue to be used in the State of California and in this
21 Judicial District. Delta has committed patent infringement within the State of
22 California and in this Judicial District. Delta maintains purposeful continuous and
23 systematic contacts with this jurisdiction, including relationships with customers,
24 and receives revenue from such customers. Delta has engaged in affirmative
25 conduct that allows and promotes the transaction of business in the State of
26 California and in this Judicial District. Delta has designated Corporation Service
27 Company – Lawyers Incorporating Service, 2710 Gateway Oaks Dr., Ste. 150N,
28 Sacramento, CA 95833 as its California Agent for Service of Process. Delta

1 operates an interactive commercial website and service that is accessible throughout
2 the State of California and in this Judicial District.

3 BACKGROUND FACTS

4 5. Plaintiff m-Qube, Inc. is one of the nation's largest messaging and
5 billing aggregators, serving all of the major wireless carriers. m-Qube is wholly-
6 owned by Mobile Messenger (www.mobilemessenger.com), which is based in Los
7 Angeles, California. With a staff of many professionals, augmented by even more
8 staff at Mobile Messenger, m-Qube's primary business is offering consumer-facing
9 merchants the ability to interact and conduct sales transactions, and conduct product
10 and marketing communications with consenting customers through mobile
11 communications. Using its patented technology, every year m-Qube processes
12 billions of such business-to-consumer messages and administers hundreds of
13 millions of dollars of transactions. In addition to Mobile Messenger, m-Qube's
14 direct and indirect customers include some of the nation's largest media companies,
15 websites, financial institutions, travel and transportation providers, charities and
16 other merchants, including the application providers and agencies who serve them.
17 Through its business-to-consumer messaging platform, m-Qube offers businesses
18 many types of carrier network messages and interfaces, number lookup, Premium
19 SMS and direct carrier billing for merchants' products and services, with
20 commercial standard-rated SMS and MMS messages being among m-Qube's core
21 offerings.

22 6. Defendant Delta Airlines, Inc. provides air transportation for
23 passengers throughout the United States and around the world. To provide
24 increased convenience to passengers, Delta offers an eBoarding Pass that replaces a
25 traditional paper boarding pass when checking in online or from a mobile device.
26 The eBoarding Pass is visible on the screen of the passenger's mobile device, and
27 contains a barcode image that is presented when approaching the security
28 checkpoint or boarding gate. To obtain an eBoarding Pass on a mobile device,

1 passengers first conveniently check-in to flights from home or elsewhere before
2 arriving at the airport, by selecting the Mobile Check-in option on Delta's website
3 (www.delta.com), or Mobile Check-in or App Check-in from Delta's iPhone or
4 Android applications. With their boarding pass conveniently displayed to include a
5 2-D barcode or other image on their mobile handset, those passengers can proceed
6 directly to security without the need to check in at an airport kiosk. Delta infringes
7 the patents-in-suit by, for example, providing the eBoarding Pass and the Mobile
8 Check-in or App Check-in options.

10 THE PATENTS-IN-SUIT

11 7. On July 22, 2008, the United States Patent and Trademark Office duly
12 and legally issued United States Patent No. 7,403,788, entitled "System and Method
13 to Initiate a Mobile Data Communication Utilizing a Trigger System," after a full
14 and fair examination. A true and correct copy of the '788 Patent is attached hereto
15 as Exhibit A. m-Qube is the assignee of all right, title, and interest in and to the
16 '788 Patent and possesses all rights of recovery under the '788 Patent, including the
17 exclusive right to recover for infringement. The '788 Patent is valid and enforce-
18 able.

19 8. On September 12, 2010, the United States Patent and Trademark Office
20 duly and legally issued United States Patent No. 7,792,518, entitled "System and
21 Method to Initiate a Mobile Data Communication Utilizing a Trigger System," after
22 a full and fair examination. A true and correct copy of the '518 Patent is attached
23 hereto as Exhibit B. m-Qube is the assignee of all right, title, and interest in and to
24 the '518 Patent and possesses all rights of recovery under the '518 Patent, including
25 the exclusive right to recover for infringement. The '518 Patent is valid and enforce-
26 able.

27 9. On March 6, 2012, the United States Patent and Trademark Office duly
28 and legally issued United States Patent No. 8,131,262, entitled "System and method

1 to initiate a mobile data communication utilizing a trigger system,” after a full and
2 fair examination. A true and correct copy of the ‘262 Patent is attached hereto as
3 Exhibit C. Plaintiff m-Qube is the assignee of all right, title, and interest in and to
4 the ‘262 Patent and possesses all rights of recovery under the ‘262 Patent, including
5 the exclusive right to recover for infringement. The ‘262 Patent is valid and
6 enforceable.

7 10. Delta infringes the patents-in-suit by, for example, providing the
8 eBoarding Pass and the Mobile Check-in or App Check-in options.

9

10

COUNT I

11

(DELTA’S INFRINGEMENT OF THE ‘788 PATENT)

12

13 11. Plaintiff realleges and reincorporates by reference herein the allega-
14 tions contained in paragraphs 1 through 10.

14

15 12. Delta has infringed and continues to infringe directly, and indirectly
16 by way of inducing infringement or contributing to the infringement of, one or more
17 claims of the ‘788 Patent by making, using, licensing, offering to sell, selling
18 (directly or through intermediaries), importing, or supplying, in this district and
19 elsewhere in the United States, products or services, including but not limited to the
20 eBoarding Pass, Mobile Check-in, and App Check-in products or services, which
21 use the methods or systems claimed and described in the ‘788 Patent. Delta is thus
22 liable for infringement of the ‘788 Patent pursuant to 35 U.S.C. § 271(a), (b) and
23 (c).

23

COUNT II

24

(DELTA’S INFRINGEMENT OF THE ‘518 PATENT)

25

26 13. Plaintiff realleges and reincorporates by reference herein the allega-
27 tions contained in paragraphs 1 through 12.

27

28 14. Delta has infringed and continues to infringe directly, and indirectly
by way of inducing infringement or contributing to the infringement of, one or more

1 claims of the '518 Patent by making, using, licensing, offering to sell, selling
2 (directly or through intermediaries), importing, or supplying, in this district and
3 elsewhere in the United States, products or services, including but not limited to the
4 eBoarding Pass, Mobile Check-in, and App Check-in products or services, which
5 use the methods or systems claimed and described in the '518 Patent. Delta is thus
6 liable for infringement of the '518 Patent pursuant to 35 U.S.C. § 271(a), (b) and
7 (c).

8 COUNT III

9 (DELTA'S INFRINGEMENT OF THE '262 PATENT)

10 15. Plaintiff realleges and reincorporates by reference herein the allega-
11 tions contained in paragraphs 1 through 14.

12 16. Delta has infringed and continues to infringe directly, and indirectly
13 by way of inducing infringement or contributing to the infringement of, one or more
14 claims of the '262 Patent by making, using, licensing, offering to sell, selling
15 (directly or through intermediaries), importing, or supplying, in this district and
16 elsewhere in the United States, products or services, including but not limited to the
17 eBoarding Pass, Mobile Check-in, and App Check-in products or services, which
18 use the methods or systems claimed and described in the '262 Patent. Delta is thus
19 liable for infringement of the '262 Patent pursuant to 35 U.S.C. § 271(a), (b) and
20 (c).

21 JURY DEMAND

22 Pursuant to Rule 38 of the Federal Rules of Civil Procedure, Plaintiff
23 hereby demands a trial by jury of this action.
24
25
26
27
28

REQUEST FOR RELIEF

WHEREFORE, Plaintiff respectfully requests the following relief:

1. A judgment that Delta has infringed directly, or by way of inducing infringement by others, or contributing to the infringement by others of the patents-in-suit;
2. A judgment and order awarding m-Qube damages, in an amount no less than a reasonable royalty, and costs, expenses, and prejudgment and post-judgment interest, for Delta's infringement of the patents-in-suit as provided under 35 U.S.C. § 284;
3. A judgment and order finding Delta's infringement of the patents-in-suit to be willful and deliberate, and a trebling of damages pursuant to 35 U.S.C. § 284;
4. An order for a permanent injunction against Delta, its respective officers, agents, servants, employees, attorneys, parent and subsidiary corporations, assigns and successors in interest, and those persons in active concert or participation with them, enjoining them from continued acts of infringement of the patents-in-suit;
5. An order directing Delta to file and serve upon Plaintiff's counsel within 30 days after entry of the Order of injunction a report setting forth the manner and form in which Delta has complied with the injunction;
6. A judgment holding this Action to be an exceptional case, and an award to Plaintiff m-Qube, Inc. for its attorneys' fees and costs pursuant to 35 U.S.C. § 285; and
7. Such other relief as the Court deems just and equitable.

1 Dated: October 9, 2012

Respectfully submitted,

2 ALAN SEGE, ESQ. PC
3 Alan Sege

4
5 By



6 Alan Sege
7 Attorney for Plaintiff
8 m-QUBE, Inc.
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

EXHIBIT A



US007403788B2

(12) **United States Patent**
Trioano et al.

(10) Patent No.: **US 7,403,788 B2**

(45) Date of Patent: **Jul. 22, 2008**

(54) **SYSTEM AND METHOD TO INITIATE A MOBILE DATA COMMUNICATION UTILIZING A TRIGGER SYSTEM**

(75) Inventors: **Michael Trioano**, Shrewsbury, MA (US); **Mark Grindeland**, Framington, MA (US); **Gerald Hewes**, Lexington, MA (US); **Eswar Priyadarshan**, West Roxbury, MA (US); **Randall Snyder**, Campbell, CA (US)

(73) Assignee: **M-Qube, Inc.**, Watertown, MA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **10/521,521**

(22) PCT Filed: **Jul. 18, 2003**

(86) PCT No.: **PCT/US03/22661**

§ 371 (c)(1),
 (2), (4) Date: **Jan. 18, 2005**

(87) PCT Pub. No.: **WO2004/010257**

PCT Pub. Date: **Jan. 29, 2004**

(65) **Prior Publication Data**

US 2006/0136546 A1 Jun. 22, 2006

Related U.S. Application Data

(60) Provisional application No. 60/397,435, filed on Jul. 19, 2002.

(51) Int. Cl.
H04Q 7/20 (2006.01)

(52) U.S. Cl. **455/466; 455/412.1; 455/414.1; 455/432.3; 455/41.2**

(58) Field of Classification Search **455/412.1, 455/412.2, 414.1, 432.3, 41.2; 205/25; 209/23; 213/85; 240/5.82; 379/142**
 See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

6,560,651 B2 * 5/2003 Mott et al. 709/229
 7,139,565 B2 11/2006 Fiala et al.
 2002/0160776 A1 * 10/2002 Torabi 455/435
 2003/0005066 A1 1/2003 Lazaridis et al.
 2003/0074328 A1 * 4/2003 Schiff et al. 705/75
 2003/0100315 A1 5/2003 Rankin
 2003/0187938 A1 10/2003 Mousseau et al.

OTHER PUBLICATIONS

PCT International Search Report, PCT/US03/22661, 4 pages.

* cited by examiner

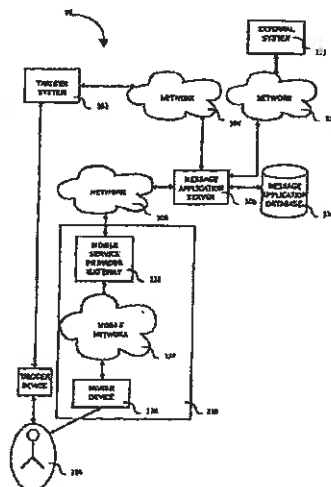
Primary Examiner—David Q. Nguyen

(74) Attorney, Agent, or Firm—Blakely, Sokoloff, Taylor & Zafman, LLP; Judith A. Szepesi

(57) **ABSTRACT**

A system and method to enable a user to initiate a communication with an organization using a mobile communication device by means of a trigger system. A system and method to enable an organization to acquire a user mobile device address by means of a trigger system. A system and method to enable an organization to respond to a user by means of a trigger system and a message application server. A system and method to enable organizations to deliver mobile messages, coupons, offers and promotions to users mobile device by means of a combination of a trigger system, a message application server and an offer application.

34 Claims, 10 Drawing Sheets



U.S. Patent

Jul. 22, 2008

Sheet 1 of 10

US 7,403,788 B2

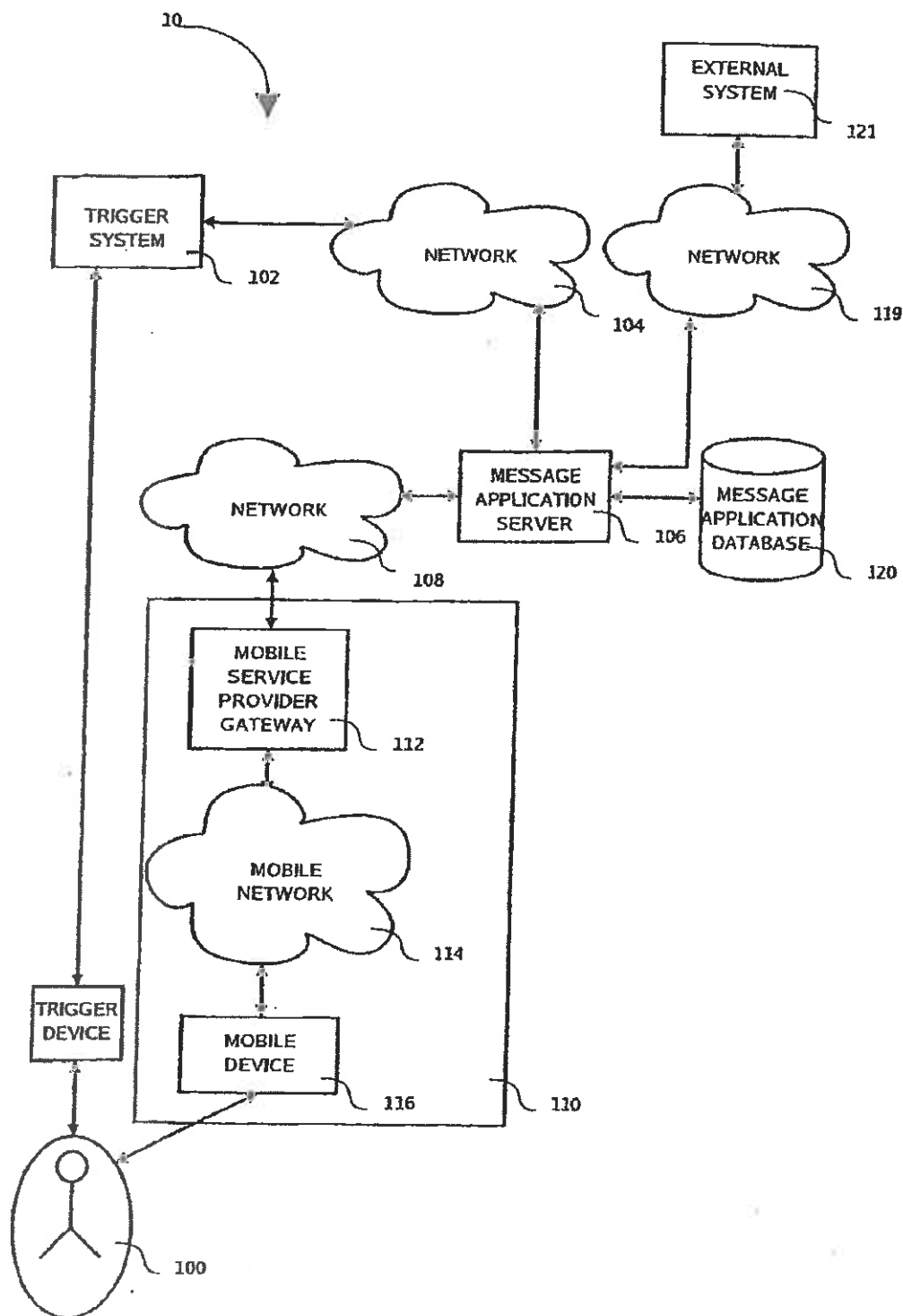


FIG. 1

U.S. Patent

Jul. 22, 2008

Sheet 2 of 10

US 7,403,788 B2

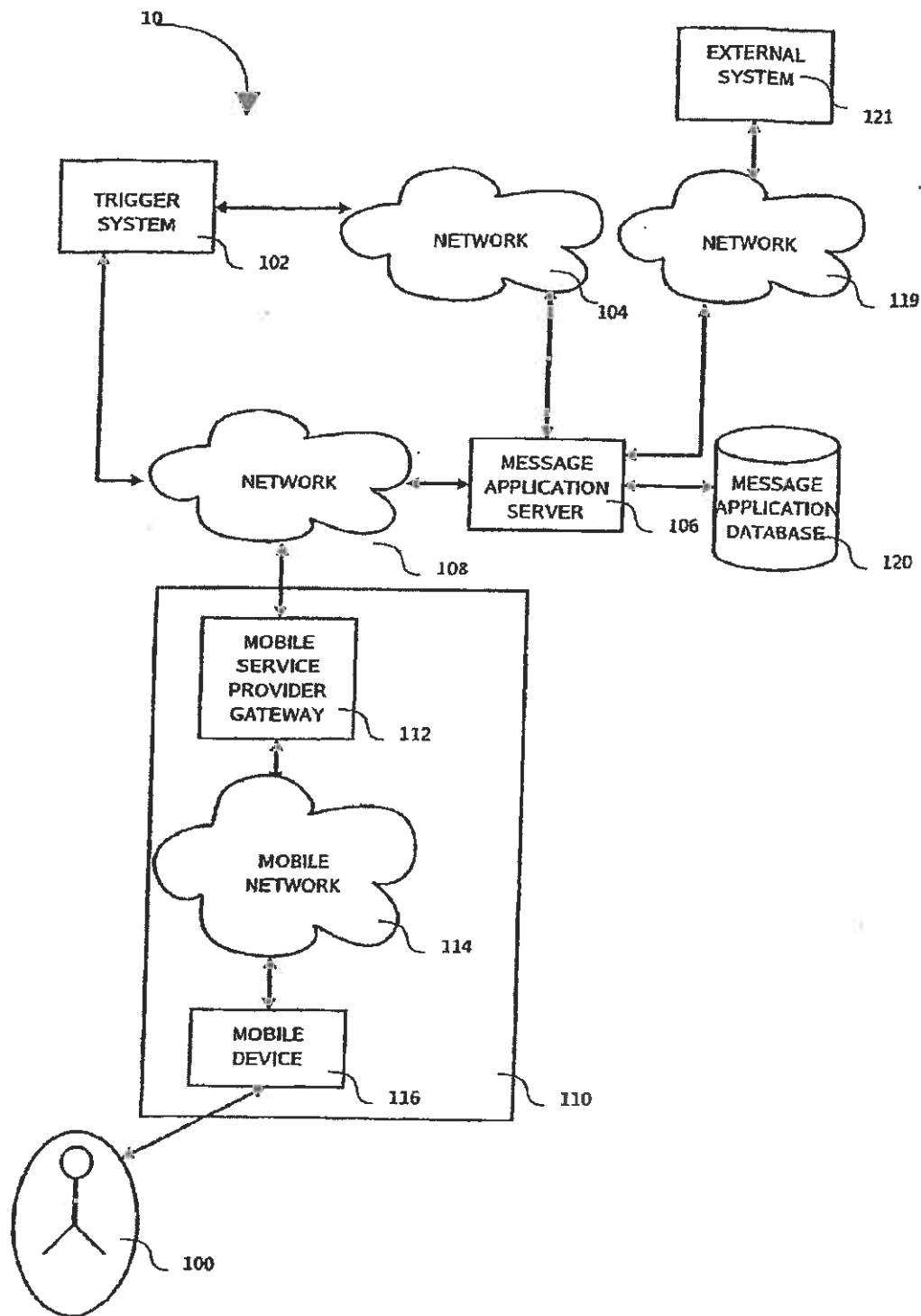


FIG. 1B

U.S. Patent

Jul. 22, 2008

Sheet 3 of 10

US 7,403,788 B2

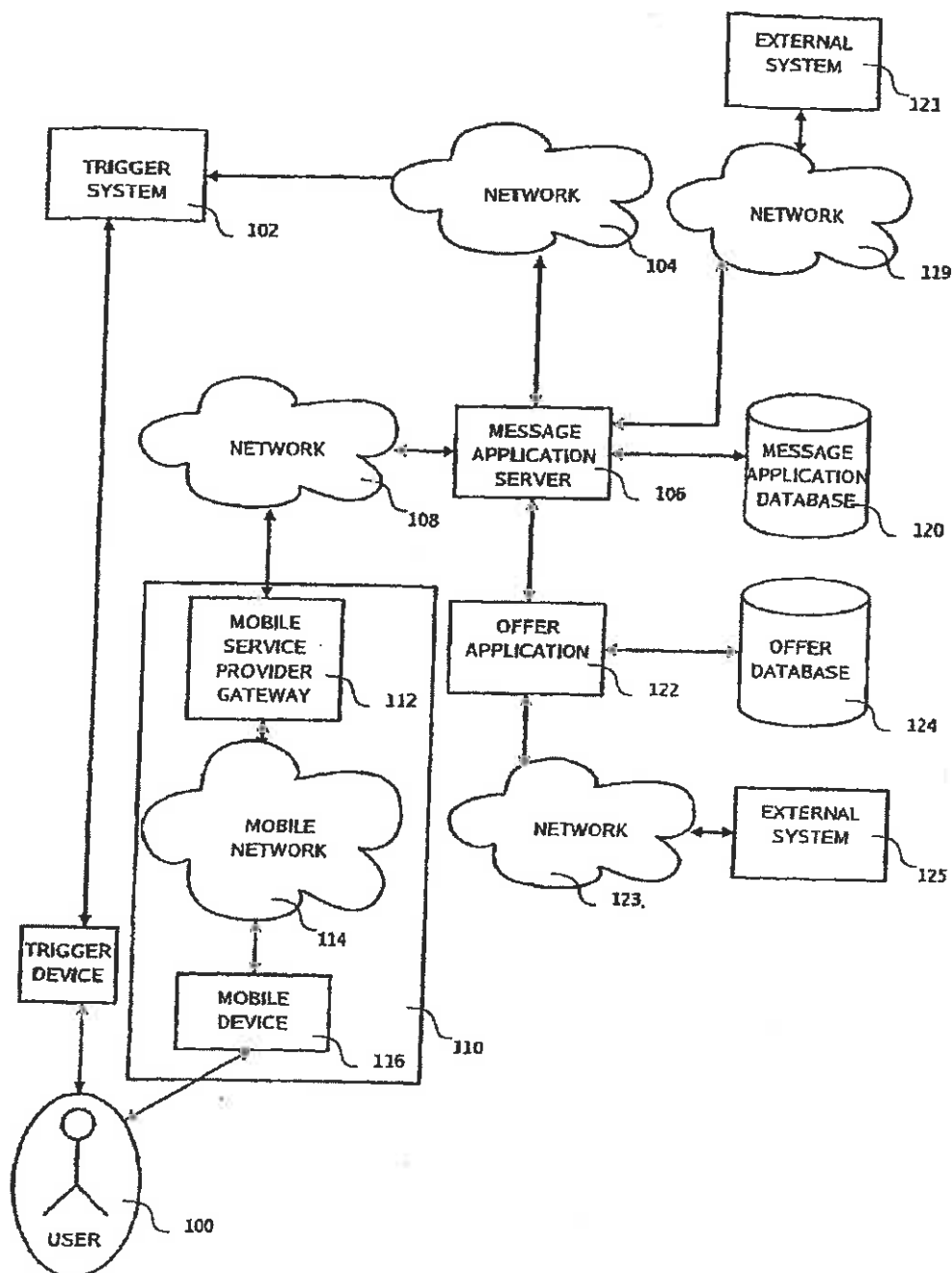


FIG. 2

U.S. Patent

Jul. 22, 2008

Sheet 4 of 10

US 7,403,788 B2

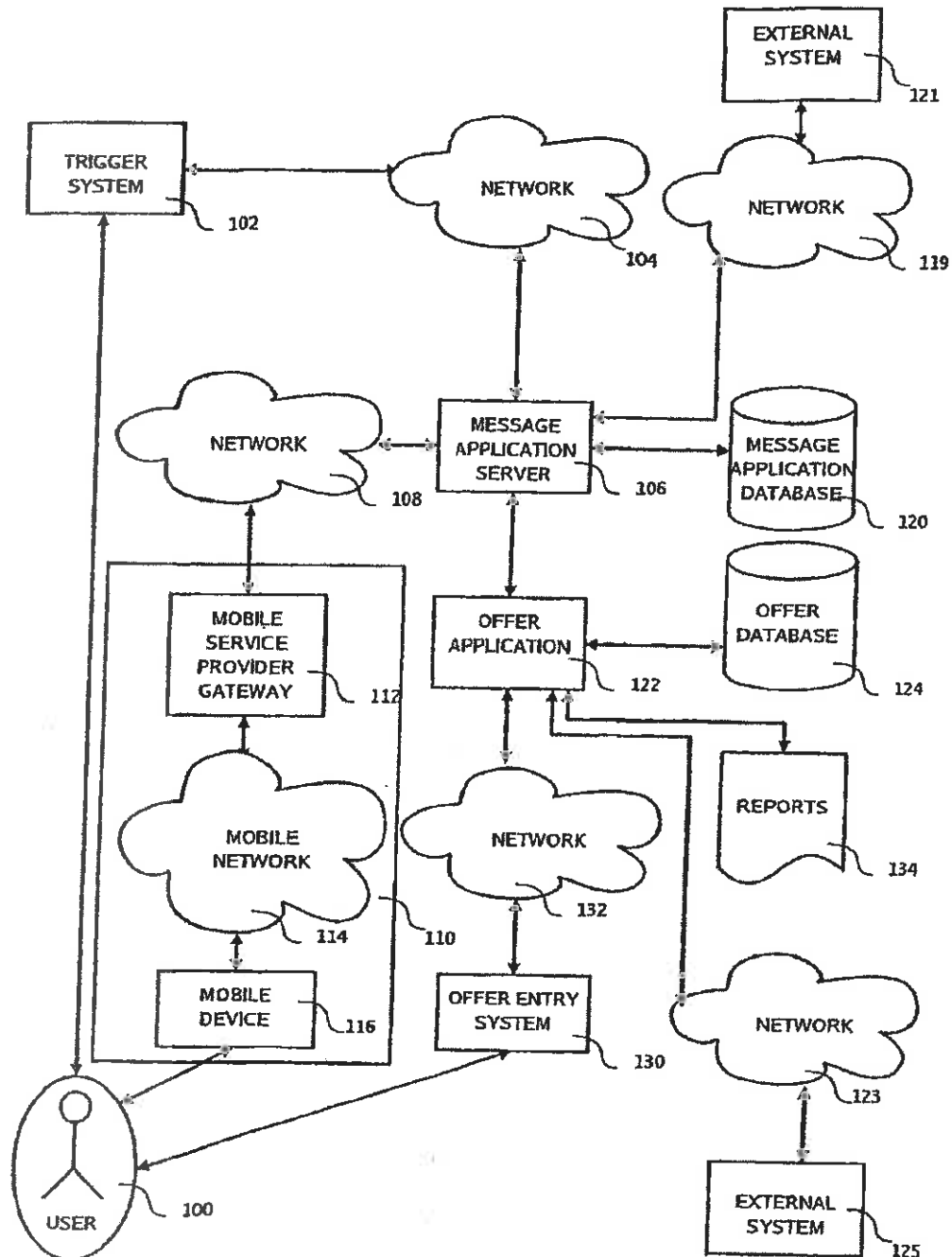


FIG. 3

U.S. Patent

Jul. 22, 2008

Sheet 5 of 10

US 7,403,788 B2

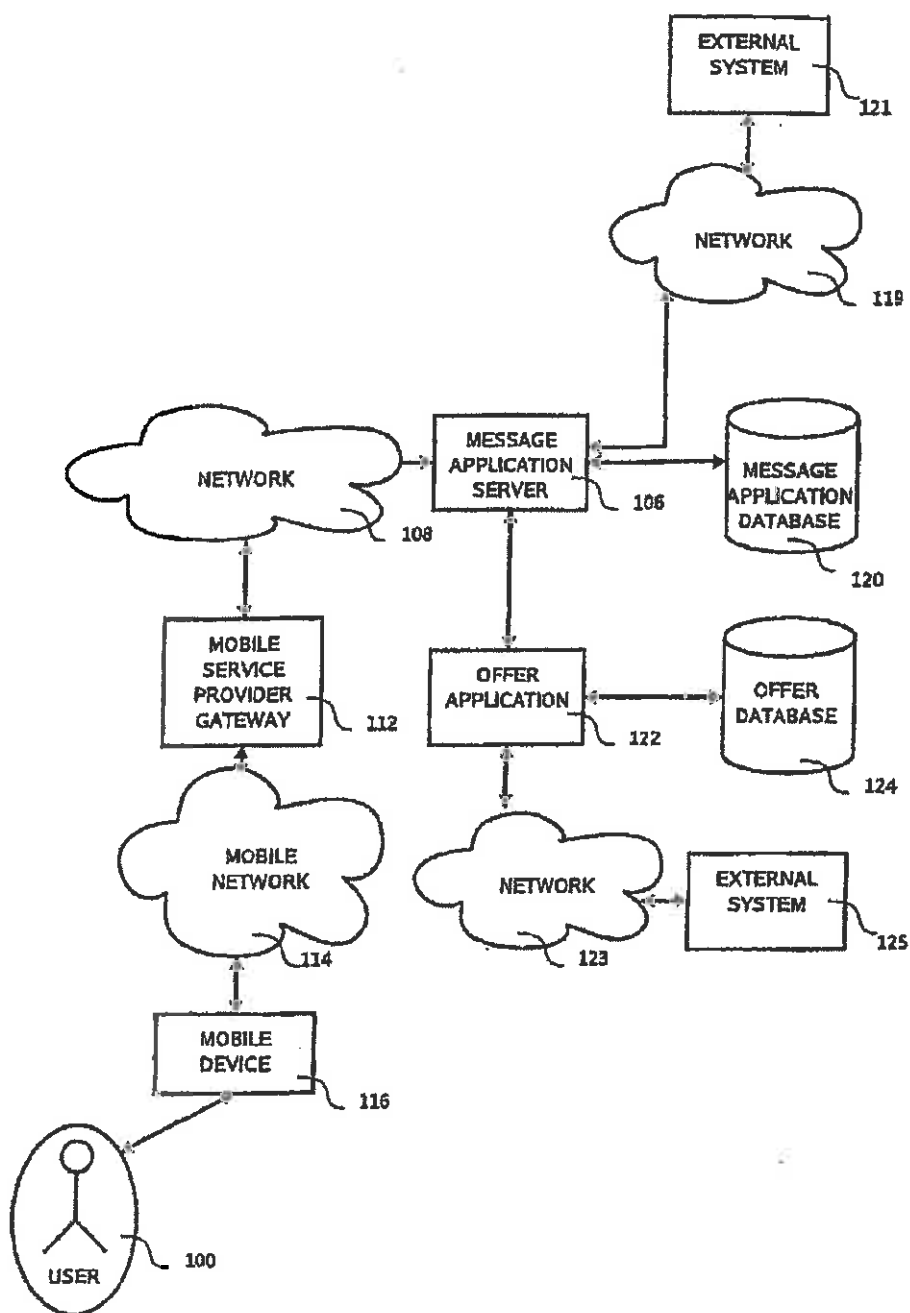


FIG. 4

U.S. Patent

Jul. 22, 2008

Sheet 6 of 10

US 7,403,788 B2

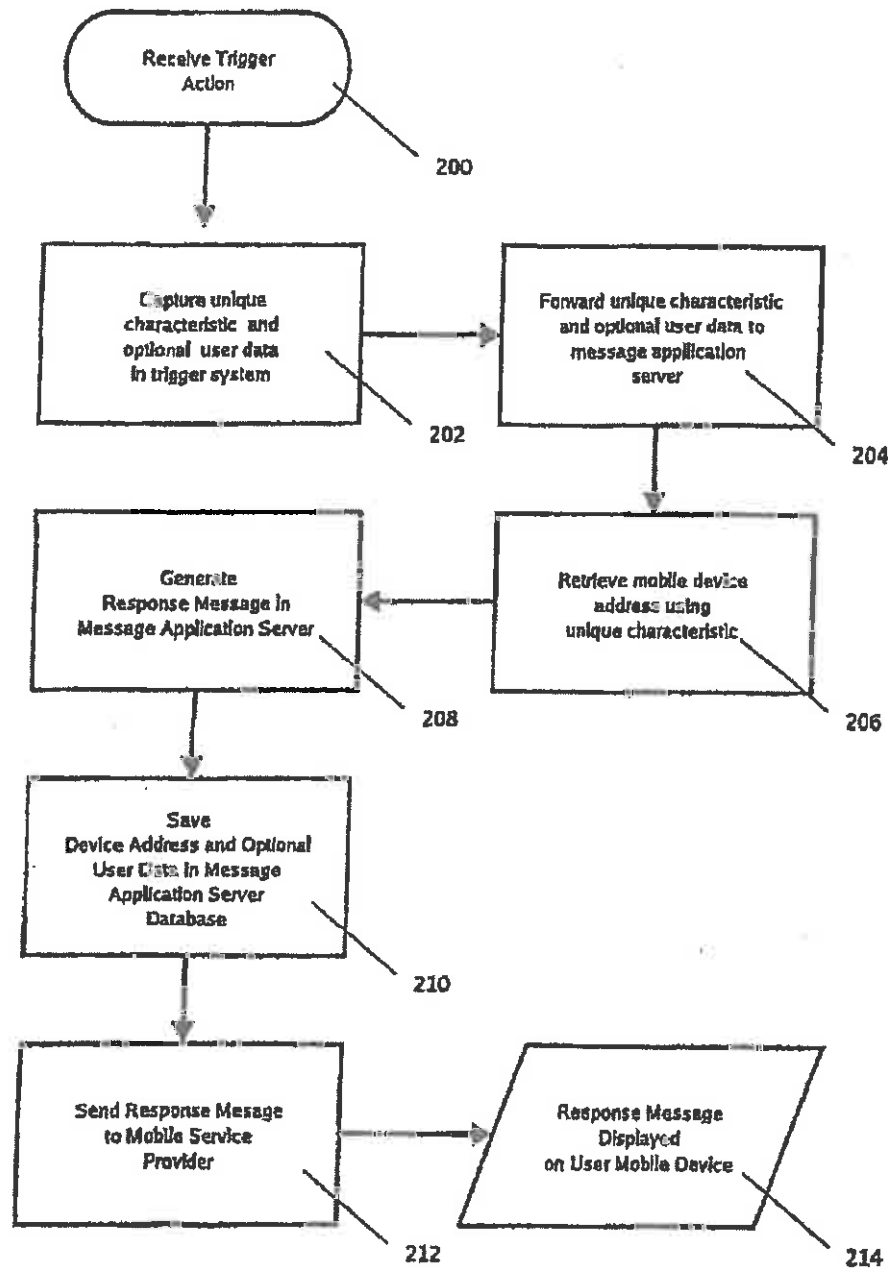


FIG. 5

U.S. Patent

Jul. 22, 2008

Sheet 7 of 10

US 7,403,788 B2

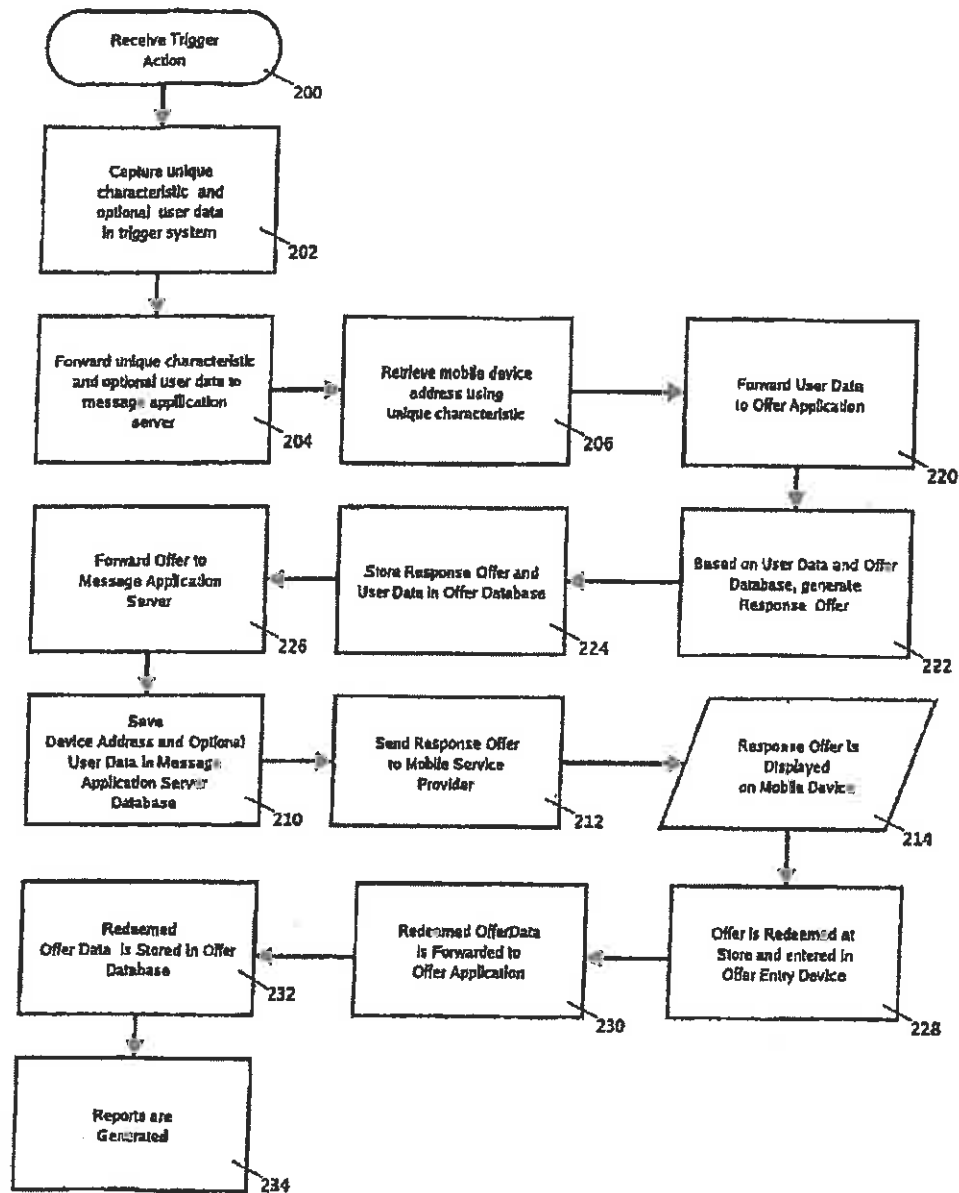


FIG. 6

U.S. Patent

Jul. 22, 2008

Sheet 8 of 10

US 7,403,788 B2

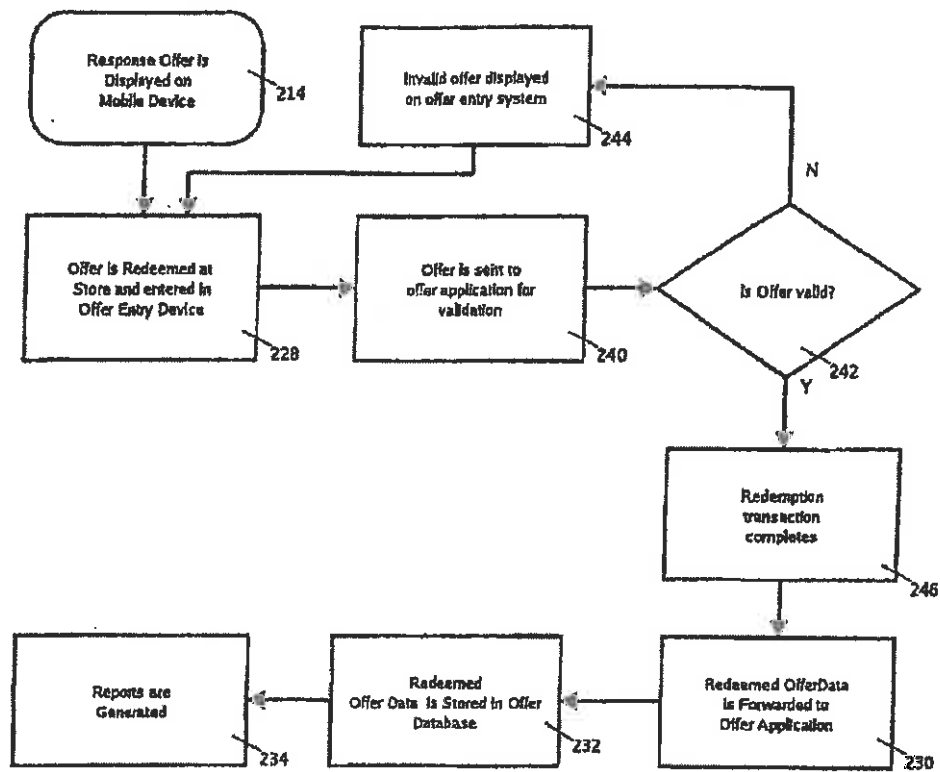


FIG. 7

U.S. Patent

Jul. 22, 2008

Sheet 9 of 10

US 7,403,788 B2

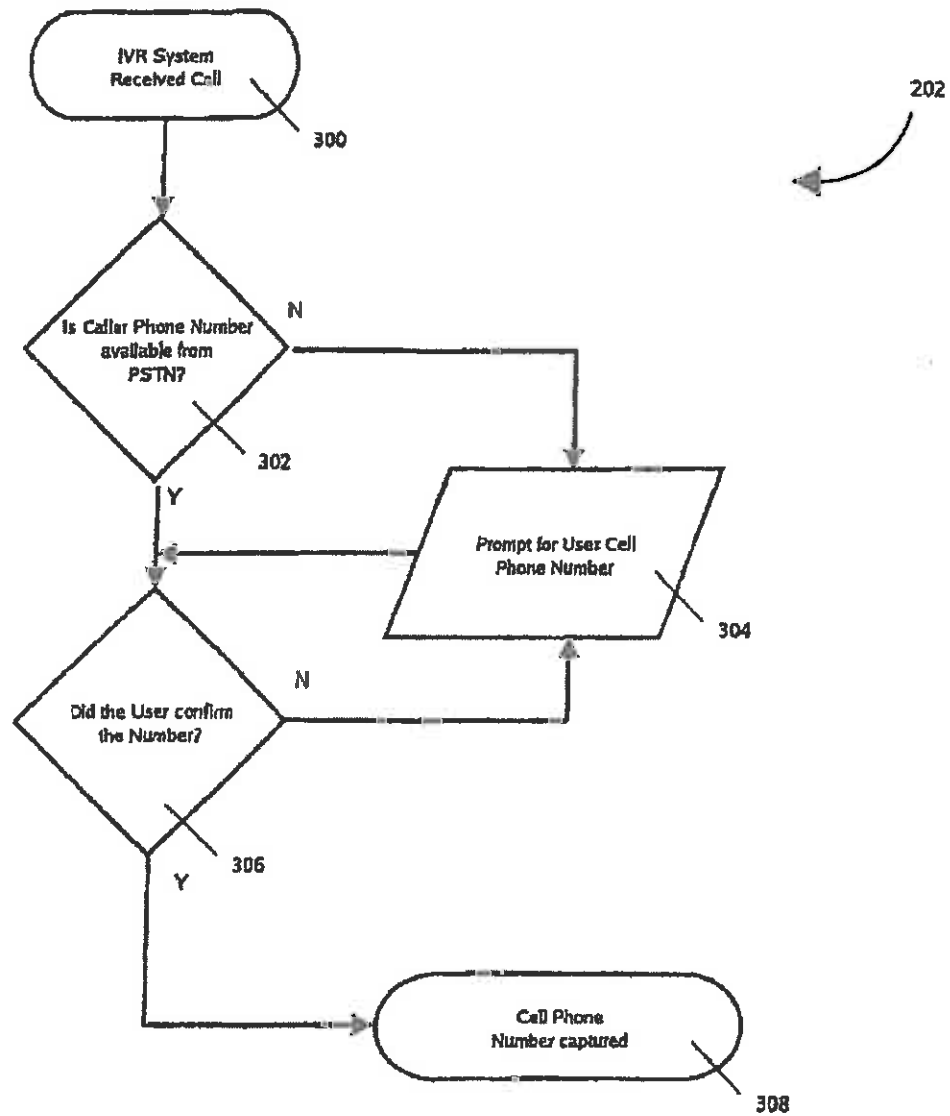


FIG. 8

U.S. Patent

Jul. 22, 2008

Sheet 10 of 10

US 7,403,788 B2

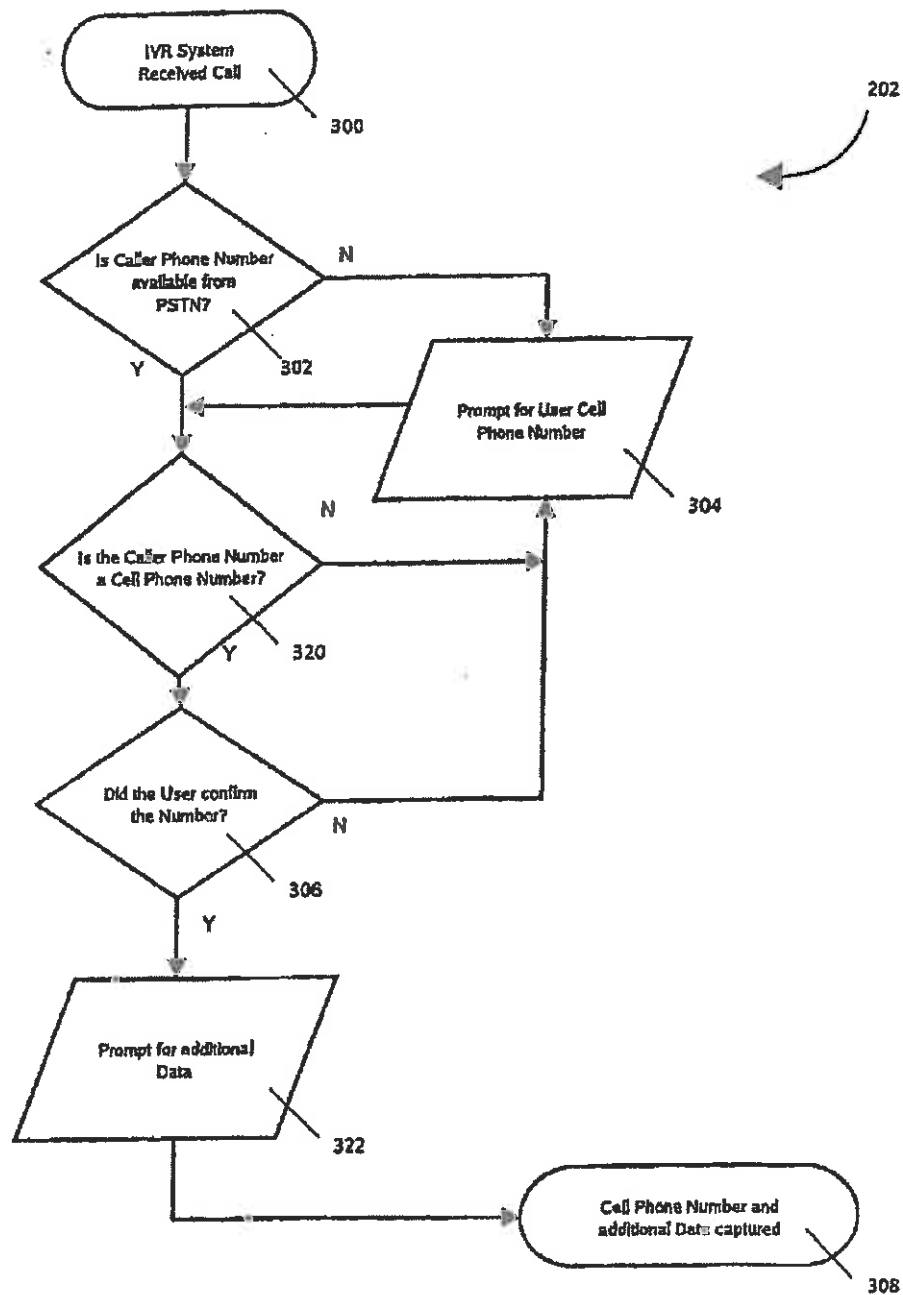


FIG. 9

US 7,403,788 B2

1

SYSTEM AND METHOD TO INITIATE A MOBILE DATA COMMUNICATION UTILIZING A TRIGGER SYSTEM

PRIORITY CLAIM

This application claims the benefit of priority of U.S. Application No. 60/397,435, filed Jul. 19, 2002, the entire contents of which are incorporated by reference as if set forth at length herein.

FIELD OF THE INVENTION

This invention relates to enabling communications between users and organizations by means of data enabled mobile communication devices. More particularly this invention relates to a system, method and machine to enable organizations to execute direct marketing techniques and promotions via mobile communication devices.

BACKGROUND OF THE INVENTION

Global brands spend hundreds of billion of dollars annually in the United States on brand marketing and communications. Over the last decade, an increasing percentage of brand marketing budgets have been spent in direct marketing channels (e.g., direct mail, telemarketing, email, etc.). In fact, total brand spending on direct mail now exceeds that of broadcast television. Given direct marketing's unique capabilities, such as precise targeting, the ability to drive specific behaviors, and highly measurable results, marketers are expected to continue spending heavily in direct channels.

One of the most significant new direct marketing opportunities is the emergence of the wireless channel. The wireless channel provides marketers the unmatched ability to reach the individual (not just the household), in a time- and event-sensitive way, with attractive and measurable marketing return on investment ("ROI"). In Europe, hundreds of brands are beginning to utilize the wireless data channels and are committing a sizeable portion of their communications budgets over the next year to wireless.

An organization wanting to use data messaging for communication with its user base needs to make it easy for them to participate. The organization needs to have a means to obtain a user's mobile device address to be able to communicate with him using his mobile device data capabilities. The organization needs to obtain the user permission to be able in the future to send new messages, coupons, offers or promotions, to the user's mobile devices.

There are multiple ways to for a user to initiate a communication with an organization and for an organization to obtain a user's mobile device address, but in this invention we are primarily focused on methods to initiate a communication when said user is in a mobile setting, such as a public environment as opposed to a home or office environment. In a mobile setting, there needs to be an easy and quick way for said user to specify his interest in starting a communication and for the organization to obtain said user's mobile device address whereby the communication can occur.

Once the communication is initiated, a message oriented application can capture the user's mobile device address in a database, and respond back with a message, a coupon, an offer or a promotion.

It is important that said user only receive future organization originated ("push") communications only if he has elected to do so. A system and method to perform commu-

2

nication between users and organizations needs to support an easy way to either opt-in or opt-out from receiving future communications.

An example of a situation where a user may be interested in initiating a communication with an organization is the case of the organization being a brand sponsoring some event; for example a contest, building brand and product awareness where the user may win some prizes. Other examples include receiving offers, coupons, promotions or discounts on their mobile device.

The communication, its goals, its benefits and how a user can initiate it is typically displayed using a traditional channel such as print media, product packaging, bar coaster, bill-board, sign, posters, TV or radio advertisements, candy wraps, etc. . . . This process is called the "call to action" message. It is easy to see that if participating is easy to accomplish, such communications can have a wide impact for both users and organizations.

One very common application of this invention is to deliver coupons, offers and promotions to users that have requested them. There is a cost for an organization to provide, promote and deploy systems to execute such mobile coupon, offer and promotion programs. Hence it is an important requirement that a system be able to measure redemption rates to compute the effectiveness of the program. In addition, much better coupons, offers and promotions can be given to individual users if their past individual receptiveness is known—which makes uniquely identifying the coupon, offer and promotion important.

There is much economical value in being able to deploy a system where users can receive messages, coupons, offers and promotions at the time of their choosing as well as occasionally receiving push specials thereby allowing the organization running the program to develop a comprehensive loyalty program bringing value to both the user and the organization. To support such a program, a system needs to exist to enable users to enroll, participate and receive occasional "push" messages, coupons, offers and promotions that leverages the capabilities of mobile data communication devices and Customer Relationship Management and Loyalty systems.

In addition, some of the offers, coupons and promotions can be valuable enough that the organization giving them out wants to make sure they are used only once. Examples of such compelling offers are very deep discount to join the offer program—think about book clubs that sell you your first three books for \$1 to join the club. In this case, the offer needs to be verified that it has not already been redeemed. Such a step is critical with the technologies described in this invention where it is often easy to forward or forge a message on a mobile device.

The primary limitations with existing methods to initiate a communication between an organization and a user using a mobile device have to do with: the time, effort and lack of convenience of triggering the communication using current systems; the lack of common service addresses for users to initiate the communication with an organization in some common existing messaging technologies; and the lack of familiarity on the part of users on how to initiate a communication using their mobile device.

BACKGROUND OF THE INVENTION-PRIOR ART

Obtaining the user's mobile device address in a mobile setting to allow for communication is not always straightforward for some classes of mobile devices, in particular

US 7,403,788 B2

3

digital cell phones. Almost all digital cell phones sold today have one or more data messaging capabilities. These may include, but is not limited to, Short Message Service ("SMS"), Enhanced Messaging System ("EMS"), Multimedia Messaging Service ("MMS"), Wireless Application Protocol ("WAP") and mobile e-mail. The large number of digital cell phones in the U.S. makes solving the problem of obtaining cell phones data address a critical problem to be solved.

One solution that is used by some wireless carriers to allow a user to initiate a communication using a cell phone with an organization, is to use a Mobile Originated ("MO") message sent to a service access code. In the case of a cell phone, a service access code can either be a short code (a number with less than the regular 10 digits defined by the North American Numbering Plan ("NANP"))—for example "2327"—or a regular NANP 10 digit number. A user that wants to respond to a "call to action" message sends an MO message to the organization service access code setup by his cell phone carrier.

While the above technique using MO messages works can work in geographies that support standardized service access codes across wireless carriers, it is much less effective in countries that don't. In countries with no standardized service access codes, like the U.S., it is awkward for an organization to publish different service access code addresses for each wireless carrier. In addition the MO technique is not effective in geographies where cell phone users are not familiar on how to send MO messages. The situation is compounded by the fact that some wireless carriers currently do not offer third parties the ability to receive MO messages sent to them.

It is possible to solve the problem of lack of standardized service access codes by using an e-mail address instead of the typical telephone digit numbers used for SMS, EMS and MMS. Using e-mail is possible because most wireless carriers offer the ability for users to send and receive e-mails from their cell phone, either directly using Simple Mail Transfer Protocol ("SMTP") or indirectly via SMS, EMS, MMS, WAP, or hyper text markup language ("HTML") by means of an SMTP gateway provided by the wireless carriers. A service using e-mail as its service address requires that users enter the service e-mail address when composing their initial MO message. Unfortunately, it is often extremely cumbersome for users to enter an e-mail address composed of alphabetical letters and symbols using a cell phone numeric keypad. For example, on a Sony-Ericsson T68i phone it takes 34 key presses (assuming no mistakes) to enter "fun@m-qube.com". Hence user response rates will be extremely low with this approach.

Another alternative that can be used to solve the problem of lack of standardized service access codes is to deploy modem banks of Personal Computer ("PC") based wireless data cards. Said wireless data card is like a miniature cell phone with its own phone number. With the peer-to-peer SMS interoperability available in many countries, any MO message sent to said wireless data card phone number would be delivered to it, and by extension to the message application server connected to said PC. While this approach effectively works around the problem of lack of standardized service access codes, it suffers from severe scalability problems (a card typically cannot handle more than 2-3 messages per second, and most cards are not designed to be operated 24x7x365.)

Another alternative is to use a range of numbers for the service access codes normally allocated to a wireless carrier for use by its subscribers, and reconfigure the carrier data

4

network elements to forward any MO messages sent to said range, not to a physical cell phone, but instead to the organization's message application server using a data network such as the Internet. This solution builds upon SMS interoperability and is scalable. But it requires that the organization have a relationship with the wireless carrier offering said range, that said wireless carrier have the capability to offer this service to organizations, and that other wireless carrier allow this to happen.

An equally critical consideration is the expertise required from users to send an MO message using the native mobile device data messaging interface. In particular, not all cell phone users know how to originate a MO message using their cell phone. Another method is required to allow them to participate before they become more familiar with their cell phone messaging capabilities. Once a cell phone user receives a message, it is much easier to reply to it since most cell phone handsets provide some guidance on how to do so.

Or, the user may be familiar with messaging, but the time involved may be a limiting factor. For example, many users may not be willing because of the inconvenience to text-in a message when entering in a supermarket to receive tailored coupons, but may be more willing to use other methods described in this invention to trigger the offers. This problem is especially acute for mobile messaging technologies that don't rely on number for addresses, but on long strings like e-mail or instant messaging screen names. While presumably it is possible to enter a long string using these mobile devices, this is usually a somewhat slow process. A faster trigger mechanism is required.

Hence existing methods using the native messaging capabilities of a user's mobile device to support mobile originated messages to allow said user to start a communication with an organization service are not effective in many situations or geographies. The limitations of the existing methods makes using the mobile channel as a direct marketing channel not a cost effective channel; as user response rates would be too low to cover the campaign costs.

BACKGROUND OF THE INVENTION-OBJECTS AND ADVANTAGES

The specific object and advantages for this present invention are:

- a) Provides for an alternative to using the mobile device native data communication interface in cases where there are no unique service address (common service access codes), no publicly supported service side infrastructure, or the user is unfamiliar with his device data messaging capabilities.
- b) Provides for faster and easier methods to trigger a communication between an organization and a user than by using the device native mobile originated messaging capabilities.
- c) Some of the embodiments described in the invention, like using an interactive voice response ("IVR") system as the trigger system, make it much easier to collect additional information such as opt-in permission for future communication or offers, or more information, such as offers of interest to the user.
- d) Enables simple, fast, practical and economical means to instantly deliver offers, coupons and promotions to users in public places.

Further objects and advantages of this present invention will become apparent from a consideration of the drawings and ensuing description.

US 7,403,788 B2

5

SUMMARY OF THE INVENTION

The present solution solves the aforementioned problem not by means of the user mobile device native data messaging services but by means of an external trigger system not based on the user mobile device data messaging capabilities.

Once the trigger system has captured a unique identifier capable of being mapped to the user mobile device address, a Mobile Terminated ("MT") message is sent to the user. From then on, the message application server is capable of future communications. The messages sent to the user can include menus and simple instructions removing the need for the user to ever originate a sophisticated MO message.

In one embodiment of the invention, said unique identifier is the mobile device address itself. In another embodiment of the invention, said unique identifier can be an identifier that is then used to retrieve the mobile device address. An exemplar embodiment uses an account number as the unique identifier, and then retrieving the mobile device address using the account number. The details on how the mobile device address is retrieved using the account number is well known to those skilled in the art. One possible implementation is to store the mobile device address in a database using the account number as the key to a data record holding the mobile device address. Other exemplary embodiments use a loyalty card number, a social security number, a membership number or employer number as the unique identifier.

This invention applies to any message oriented data communication system, including, but not limited to SMS, BMS, MMS, WAP, hypertext markup language ("HTML"), XHTML and other HTML derivatives, mobile e-mail, client side mobile device execution environments such as Java 2 Mobile Edition ("J2ME™"), Brew™, Linux™, or Symbian OS™.

A further aspect of the invention, a system and method is also provided to deliver follow-on messages from the organization once the user mobile device address is captured.

A further aspect of the invention, a system and method is also provided to deliver, an instant mobile coupon, offer, or promotion that can be redeemed providing for a complete system and method to deliver messages, coupons, offers and promotion to users.

In one embodiment, the present solution is a network based system and method, consisting of a trigger system, a message application server and a mobile device service provider system. It allows any user equipped with a mobile device capable of receiving messages to initiate a sequence whereby said user can receive one or more messages from said message application server. Furthermore, said message application server can store said user mobile device address in a database for later communications from said message application server to said user.

The organization service is presented in a traditional media format, including but not limited to, on a print advertisement, on a product packaging, on a bill-board, on a poster, on a flyer, on a coaster, on a candy wrap, on a store display, in a TV ad, in a radio ad, on an Internet site. The presentation includes instructions on how the user can interact with the trigger system. The presentation is called the "call to action" message.

In one embodiment, the trigger system confirms the user mobile device address, handles exceptions, and optionally obtains additional data from the user or opt-in permission if applicable. Once the session with said trigger system is

6

completed, the trigger system informs the message application server which sends a message to the user mobile device.

BRIEF DESCRIPTION OF THE DRAWINGS

The foregoing and other features of the present invention will be more readily apparent from the following detailed description and drawings of the illustrative embodiments of the invention in which:

FIGS. 1 and 1B depicts aspects of an exemplary embodiment of the present invention in accordance with the teachings presented herein.

FIG. 2 depicts an alternative exemplary embodiment of the present invention in accordance with the teachings presented herein containing additional components to deliver messages, coupons, offers or promotions.

FIG. 3 depicts an alternative exemplary embodiment of the present invention in accordance with the teachings presented herein containing additional components to track the redemption of coupons, offers or promotions.

FIG. 4 depicts an exemplary embodiment of delivering follow-on Mobile Terminated messages once the user mobile device address is known.

FIG. 5 is a functional block diagram of the method of capturing a user mobile device address and using it to send a message to the user.

FIG. 6 is a functional block diagram containing the additional steps to deliver messages, coupons, offers or promotions to a user.

FIG. 7 is a functional block diagram of an exemplary embodiment of coupons, offers or promotion redemption.

FIG. 8 is a functional block diagram to capture a user cell phone number in an embodiment of this invention where the trigger system is an IVR system.

FIG. 9 is a functional block diagram of an alternative exemplary embodiment using an IVR system as a trigger system containing the additional steps of verifying if the user calling number is a wireless phone number and capturing additional data.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Aspects, features and advantages of exemplary embodiments of the present invention will become better understood with regard to the following description in connection with the accompanying drawing(s). It should be apparent to those skilled in the art that the described embodiments of the present invention provided herein are illustrative only and not limiting, having been presented by way of example only. All features disclosed in this description may be replaced by alternative features serving the same or similar purpose, unless expressly stated otherwise. Therefore, numerous other embodiments of the modifications thereof are contemplated as falling within the scope of the present invention as defined herein and equivalents thereto. Hence, use of absolute terms, such as, for example, "will," "will not," "shall," "shall not," "must," and "must not," are not meant to limit the scope of the present invention as the embodiments disclosed herein are merely exemplary.

Turning to FIG. 1 there is shown the basic architecture of one embodiment of a system for capturing a user mobile device address by means of a trigger system. The system comprises a trigger system 102 which can be triggered by a user 100 using a trigger device. Said trigger system 102 is connected by means of a data network 104 to a message application server 106. The message application server 106

US 7,403,788 B2

7

is further connected to a mobile service provider or carrier system 110 by means of a data network 108 and the mobile service provider gateway 112. The mobile service provider gateway 112 acts as a gateway into the mobile service provider network 114. The mobile service provider gateway 112 is further capable of sending messages to the user 100 mobile device 116 by means of the service provider mobile network 114. Said user 100 can then read messages sent to his mobile device 116.

The trigger system 102 is any system capable of capturing a unique identifier capable of being transformed into the user mobile device 116 messaging address, and optionally other data. The system described in this invention requires that the trigger system 102 or the message application server 106 be able to directly or indirectly retrieve the mobile device 116 address based on said unique identifier captured by the trigger system 102, and be able to use the mobile device address to send messages to the mobile device 116. Once the trigger system 102 is triggered by user 100, it sends said mobile device messaging address or said user unique identifier along with any other captured data to the message application server 106 by means of data network 104.

The trigger system 102 can be triggered by the user either by using his mobile device 116, or by using any other system or method.

In one exemplary embodiment of this invention, the trigger system is a computing device equipped with a card reader where the magnetic stripe of the card contains said unique identifier.

In one exemplary embodiment of this invention, the trigger system is a computing device equipped with a bar code reader. The user swipes an object with a bar code containing said unique identifier, such as a key chain card.

In one exemplary embodiment of this invention, the trigger system consists of Radio Frequency Identification ("RFID") readers located in public areas, for example at the doors of stores. The user carries an object with an embedded Radio Frequency Identification RFID tag containing said unique identifier. The trigger system is simply triggered by the user when walking through or near the RFID readers.

In one exemplary embodiment of this invention, the trigger system is a client application running on the user mobile device combined with a server side system. The communication is triggered when the user activates the application and instructs it to trigger the interaction. The client application, by means of the data messaging capabilities of the mobile device notifies the service side system, which can be the message application server, to initiate the communication.

In one exemplary embodiment of this invention, the trigger is a client application running on the user mobile device combined with a local receiver system. The communication is triggered when the user activates the application and instructs it to trigger the interaction. The client then uses a local networking infrastructure such as infra red, Bluetooth®, WiFi or any other local wireless protocol to send the trigger to said receiver system which forwards it to the message application server.

In one exemplary embodiment of this invention the trigger system is any system capable of performing biometric or user identification of said user. Examples of such system include but is not limited to finger-print readers, eye readers, voice identification and video camera identification.

In one exemplary embodiment of this invention, the trigger system is a kiosk where the user enters the unique identifier in the kiosk—for example using a keyboard, a keypad or a touchscreen.

8

In one exemplary embodiment of this invention, the trigger system 102, is an IVR system accepting phone calls which is programmed to capture said unique identifier. Various techniques known to those of skill in the art can be used to capture said unique identifier. This includes but is not limited to accepting Dual Tone Multi Frequency ("DTMF") or using voice recognition. The user triggers an interaction with the system by calling a phone number mapping to the IVR system and entering at the prompt said unique identifier and any additional data requested by the IVR. At the end of the call, all the captured information is forwarded to the message application server.

In one embodiment of this invention, the trigger system 102 is an IVR system and the mobile device 116 is a data enabled cell phone or any data device capable of receiving messages sent to a phone number address as described previously. In such embodiment, the IVR system can be further programmed to automatically capture the calling number. Capturing the calling number is very common in IVR systems using the Public Switch Telephone Network ("PSTN") Caller Id infrastructure. If the phone call is made using said cell phone, and the calling number is made available to the IVR, then the step of capturing the cell phone number can be further accelerated by spelling out the number and asking the user to validate the number. For example, the confirmation can be achieved using the following message: "You called from XXX-XXX-XXXX, if this is correct press 1, to enter a different phone number press 2". If the user confirms the number then the IVR can move on to capturing the optional data. If the user does not confirm the number, then the IVR can prompt the user for a new mobile device phone number. This last case is useful for example if the user called from a land based line and the IVR recognized the land line number. If the IVR does not receive the calling number from the PSTN, then the IVR system is programmed to directly prompt the user for his mobile device phone number.

In one exemplary embodiment, the trigger system 102 is wireless card attached to a computing device as described earlier. In the prior art section, we mentioned that wireless data cards suffer from scalability limitations. In this embodiment of the invention, the wireless data card is used only as a trigger system to receive the first MO message. All follow-on messages can then be sent to the user mobile device 116, using the mobile device 116 mobile service provider specific short code for this program. This invention overcomes the lack of standardized short codes in certain geographies and the lack of scalability of PC based wireless cards by using the wireless card only as a trigger system and not for subsequent message delivery. For example, the user would send an initial MO message to the wireless data card number, say NNN-NNN-NNNN which would be routed to the wireless data card using the carrier peer-to-peer infrastructure. The response from the message application server 106, would then use a separate service address for each carrier. Carrier A may use a five digit short code XXXXX, carrier B a six digit short code XXXXXX, and carrier C a normal ten digit number MMM-MMM-MMMM. When the user receives the message, he can easily reply back and the fact that each user may be using a different address because they have a different wireless carrier is not an issue.

In one exemplary embodiment, the trigger system 102 is a phone switch. The phone switch is connected to the PSTN SS7 network. Upon receiving a call establishment request, the phone switch would refuse such request, capture the user calling number and forward said caller number to the message application server 106. The advantage of this

US 7,403,788 B2

9

embodiment is that neither the user nor the organization is billed for the call, since it was not completed, and the organization does not incur an IVR cost. The downside is additional data cannot be captured on the user, and the end user experience is probably strange as the call is not accepted.

In another embodiment, the trigger system is a computing device where the user supplies her mobile device address connected to the message application server using a data network, including but not limited to the Internet. In another embodiment, the trigger system is a network accessible computing device that the user connects to using another device—for example a web and WAP application accessed from a client computer using a browser—connected to the message application server using a data network.

The presented embodiments for the trigger system 102 are illustrative only and not limited to the ones presented. Numerous other embodiments of the trigger system 102 are contemplated as falling within the scope of this invention.

The data network 104 is any data network using any messaging protocol. In one exemplary embodiment, the network is based on TCP/IP and the trigger system 102 forwards the unique identifier and optional data using a Web Service call based on the Simple Object Access Protocol ("SOAP").

The message application server 106 is any computing server designed to process messages. It is programmed to be able to execute instructions upon receiving incoming messages from mobile devices, such as mobile device 116, and from any other external source. One of the instructions that the message application server is capable of executing is sending messages out to mobile devices. One of the event requests capable of triggering the message application server 106 to execute said instructions is the receipt of a notification that a user triggered the trigger device 102.

In one exemplary embodiment, the message application server 106 is implemented as a cluster of Java 2 Enterprise Edition ("J2EE™") components running on commonly available computer hardware running commonly available operating systems. In one exemplary embodiment, the message application server 106 is implemented using the Jboss™ Java application server and uses an Oracle® database to maintain persistent data. In one exemplary embodiment the dialog instructions to execute upon receiving an MO message or a trigger requests are implemented in one or more extensible markup language ("XML") document(s). Multiple other embodiments of the message application server are possible and known to those of skill in the art.

In one preferred embodiment, the message application server 106 is additionally connected to a message application database 120. The database can be used as part of the implementation of the message application server. In one exemplary embodiment, the database stores data on the active communication programs, including but not limited to, program data; user data; user session data; system logs. The usage of a database to implement sophisticated server applications is well known to those of skill in the art and many possible usage of the database is possible and within the scope of this invention.

The message application server 106 is connected to one or more service provider gateway 112 using any suitable data network 108. In an exemplary implementation, the data network is the Internet using a virtual private network ("VPN") using the short message peer-to-peer ("SMPP") protocol. Other exemplary implementations use the Internet without a VPN, use private TCP/IP based connections ("leased line"), or use a dedicated X.25 connection or any

10

other available data network and protocol. The message application server 106 can simultaneously support multiple mobile service providers systems 110 and mobile device 116 technologies and hence can be connected to multiple service providers systems 110. The message application server 106 can be similarly connected a plurality of trigger system 102.

The message application server 106 can send, and optionally receive, messages to and from the mobile device 116, by means of the mobile service provider system 110. The actual details of the mobile service provider infrastructure are not relevant to this present invention and in practice take many forms.

In one exemplary embodiment, the mobile provider system 110 is broken down into a mobile service provider gateway 112 responsible for interfacing with the message application server 106 by means of data network 108. Using methods known to those skilled in the art, messages can be exchanged between mobile devices, such as mobile device 116 and the mobile service provider gateway 112 by means of a mobile network 114.

The mobile device 116 is any device a user can carry along with him that is capable of receiving data messages from at least the message application server 106 by means of the service provider system 110. In general, the mobile device 116 is also capable of sending messages to the message application server 106 as well as being able to send and receive messages to other mobile devices and other service applications. More capable devices can also send messages, or send and receive more complex messages than text messages such as multi-media messages.

In one embodiment of the invention, the mobile device 116 is a data enabled cell phone, or any data device capable of receiving and sending messages sent to a phone number address. The later can include wireless enabled personal data assistants ("PDA") or any other computing device capable of receiving messages sent to a phone number.

In one exemplary embodiment of the invention, the mobile device 116 is a data capable device capable of receiving and sending messages using e-mail protocols, including but not limited to SMTP, Post Office Protocol ("POP") and Internet Message Access Protocol ("IMAP").

In one exemplary embodiment of this invention, the mobile device 116 is a data capable device capable of receiving and sending messages using a client application that uses a data network, including but not limited to the Internet protocol ("IP"). The mobile device can use any IP transport, including but not limited to 801.11, 801.11a, 801.11b, 801.11g and Wifi.

In one exemplary embodiment of the invention, the mobile device 116 is a data capable device capable of receiving and sending messages using an instant messaging protocol. Examples of instant messaging service provide include, but is not limited to, AOL Instant Messenger™, Yahoo!® Messenger, MSN® Messenger, Jabber® and other similar protocols.

Turning to FIG. 2 there is shown a block diagram of an embodiment of the invention further comprising components to deliver coupons, offers and promotions to the user. The message application server 106 is further connected to an offer application 122. The offer application 122 is connected to an offer database 124.

The offer application 122 is responsible for selecting and creating coupons, offers and promotions for said user 100. The coupon, offer or promotion is part of the message that will be sent to the user device 16 as described above.

In one embodiment, the coupons, offers and promotions are implemented using an offer message. In a preferred

US 7,403,788 B2

11

embodiment, the coupons, offers and promotions are implemented using an offer code and an offer message. In one exemplary embodiment, the coupon and promotion offers are represented by numerical codes. In one exemplary embodiment, the coupons and promotion offers are represented by alphanumeric codes. In one embodiment, the coupons, offers and promotions are implemented using data, including but not limited to text data, XML data and binary data, which is interpreted by an application running on said user mobile device 116. In one exemplary embodiment, the coupons and promotion offers are represented by graphical images—including bar codes.

In one exemplary embodiment each user receives the same coupon, offer or promotion code. In another exemplary embodiment, each coupon, offer or promotion code is unique and encodes the coupon, offer or promotion and a user identification. In one exemplary embodiment, the user identification is a sequence number, a short 3-5 digit sequence, allowing the encoding of 1000-100,000 unique users. Each time a user triggers the system and a message, coupon, offer or promotion is generated, a new sequence number is generated and stored in the offer database with the generated offer. At redemption time, the sequence number is extracted from the offer code and the most recent offer with the same offer and sequence number is matched. The benefit of this exemplary embodiment is to keep the unique identifier short in the common case that the code is manually entered at redemption time. In most retail environments, the speed of customer checkout is critical and the more digits need to be entered, the longer it takes to capture the message, coupon, offer or promotion code and the more likely an input error will be made.

In one preferred embodiment, the message, coupon, offer or promotion code includes a checksum digit, using any of the well known checksum algorithms, including but not limited to the mod 10 algorithm used in credit card numbers, whereby invalid coupon, offer or promotion codes due to input errors can be determined.

These various embodiments of coupons and promotion offers are illustrative only and not limiting, therefore numerous other embodiments of coupons, offers and promotions on mobile devices fall within the scope of this invention.

The offer database 124 is used by the offer application 122 to store available offers, to maintain user profile information concerning coupons, offers and promotions, to maintain logs of created offers. The usage of database to implement sophisticated server applications is well known to those of skill in the art and many possible usage of the database is possible and within the scope of this invention.

In one preferred embodiment, the offer application 122 is connected to an external system 125 comprising enterprise systems, customer relationship management ("CRM") systems or loyalty systems that are involved in the generation, redemption and analysis of the offers.

Internal details of the offer application and the coupon, offer and promotion codes is not discussed in further details as they are known to those skilled in the art. Coupling and all the issues around generating coupons, matching coupons to users based on multiple parameters including past interaction and demographic data is a well established industry. All these coupling techniques apply to the coupon generation and fall into the scope of this invention.

Turning to FIG. 3 there is shown a block diagram of an embodiment of the invention further comprising components to track the redemption of coupons, offers or promotions. The system further comprises above FIG. 2, an offer entry system 130 used to validate and capture coupons,

12

offers, and promotions redemption. The offer entry device 130 is connected to the offer application 122 by means of a data network 132. Optionally, an external system 121 or 125 interfaces with either the message application server, the offer application or both.

In one embodiment, the offer entry system validates the coupon, offer or promotion code. In one embodiment, the offer entry system captures the coupon, offer or promotion redemption for storage in the offer database 124. In one preferred embodiment, the offer entry system validates and captures the coupon, offer or promotion code for storage in the offer database 124.

In one preferred embodiment, the offer entry system 130 is a computing device located where the coupon, offer or promotion is redeemed. The coupon, offer or promotion code is entered at redemption time. In this preferred embodiment the coupon, offer or promotion code is validated in real-time by checking the code on the offer entry system 130 (for example the offer code can contain a checksum that is verified), then by sending a request by means of data network 132 to the offer application 122, that verifies the coupon, offer or promotion code. In this exemplary embodiment, redemption data can be analyzed by the offer server 122 and reports 134 created.

In one preferred embodiment, the offer entry system is a point of sale ("POS") terminal programmed to implement the logic described above. If the coupon, offer or promotion code is validated in real-time preventing fraud and providing for duplicate checking, it is possible to offer valuable coupons, offers and promotions that otherwise might not be economical to provide without such checks.

In an exemplary embodiment, the offer entry system 130 is a stand-alone computing device, for example a kiosk. The user enters the coupon, offer or promotion code in the offer entry system 130, and the offer entry system prints out a paper coupon. The user can then redeem the paper coupon like regular paper coupons. In an exemplary embodiment, the offer entry system 130 locally stores each redemption, and the data can be uploaded on a regular basis, by means of a data network 132 to the offer application 122. In an exemplary embodiment the offer entry device 130 is equipped with removable storage. On a regular basis the removable storage is replaced and the content is read on a compatible device and the data uploaded to the offer application 122.

In one exemplary embodiment, the coupon, offer or promotion code has the same format as a payment number like a credit card number. The existing payment processing infrastructure is used to authorize and capture coupon redemption. The operator of the system described in this invention would request a unique bank id prefix to distinguish its offer numbers from credit or payment card numbers. In one exemplary embodiment, said payment processing infrastructure is configured to track coupon, offer and promotion redemption and credit the user for his coupon, offer and promotion.

The data network 132 is any data network or any means using any messaging protocol or data representation not necessarily always connected allowing for the transfer of data, in real-time or in batch mode, from the offer entry device 130 to the offer application 122. In one preferred embodiment, the network is based on the Internet Protocol.

Turning to FIG. 4 there is shown a block diagram of an embodiment of the invention illustrating how follow-on messages can be sent at later dates to said user 100. Messages, coupons, offers and promotions are delivered immediately upon the user activating the trigger system 102.

US 7,403,788 B2

13

But the organization, can also decide to send further messages, coupons, offers and promotions to users that have participated previously. Under this scenario, during the initial communication, the message application server 106, or the offer server 122 stores the mobile device 116 address. At a later date, when the organization wants to push out new messages, coupons, offers or promotions, the list of users that have participated is looked up. If the message includes a coupon, offer or promotion, it may be looked up by the offer application 122 using a mechanism similar to the one described above. The push message is then delivered to the user using the same system and method described earlier.

FIG. 5 illustrates the basic steps of the invention. In a typical usage of the invention, the user 100 is encouraged to trigger the system by a "call to action" message presented in a traditional media format. The trigger system 102, upon being triggered (step 200) is designed to capture (step 202) the unique identifier capable of identifying the user mobile device 116, and optionally other data. The captured data is then forwarded (step 204) to the message application server 106. The message application server 106 then retrieves (step 206) the mobile device address of the user based on the unique identifier. The message application server 106 then executes (step 208) a programmed set of instructions whereby an appropriate response message is generated. Optionally, in step 210, all the forwarded data, and any additional data generated by the execution of the instructions in step 208 are saved in the message application database 120. The response message is then forwarded to the mobile service provider gateway 112 in step 212, for delivery to the mobile device 116 by the mobile service provider. Said user can then read said response message on said mobile device 116 in step 214.

In an alternative embodiment, step 206 is not performed in the message application server 106, but instead in the trigger system 102, and either the mobile address or both the mobile address and the unique identifier are forwarded to the message application server in step 204.

FIG. 6 illustrates the basic steps of the invention described in FIG. 5 augmented by the delivery of a coupon, offer or promotion. The trigger steps 200, 202, 204 and 206 are the same as in FIG. 5. Instead of directly generating the response message in the message application server 106, all the user data available in the message application server including the unique identifier, the mobile device address, the optional user data is forwarded to the offer application 122 (step 220). Based on all the available data, the offer server 122 generates an offer (step 222). The generated offer and any other user data is stored in the offer database 124 (step 224). The response message containing the coupon, offer or promotion is forwarded back to the message application server 106 for delivery to the mobile device 116 (step 226). The message delivery steps 210, 212 and 214 are the same as in FIG. 5. Later on the user will redeem the coupon, offer or promotion message, for example in a store. The coupon, offer or promotion being redeemed is entered (step 228) in the offer entry system 130. Either in real-time or in batch the redemption data is forwarded to the offer application 122 (step 230). The redemption data is then stored in (step 232) in the offer database 124. Based on the data stored in step 224 and step 232 in the offer database 124, reports 134 can be generated that show redemption rates from which the effectiveness of the promotion can be measured.

FIG. 7 illustrates another preferred embodiment, where the coupon, offer or promotion is verified after step 228, by interrogating the offer application 122. Started from step 214 of FIG. 6, the offer is entered in the offer entry system 130

14

in step 228. The offer is then forwarded to the offer application 122 for verification by means of data network 132 (step 240). The offer is verified by the offer application 122 (that is the offer application verifies it's a valid offer, and has not been already redeemed if duplicate checking is configured) (step 242). If the offer is valid, then the redemption proceeds (246) and the following steps are the same as in FIG. 6. If the offer is invalid, the status is made available to the offer entry device 130 (step 244). In the case of an invalid offer, the offer may be re-entered since the offer may have been rejected due to an input error. If the offer has already been redeemed, there is no benefit in re-entering the offer.

FIG. 8 illustrates step 202 in an exemplary embodiment where the trigger system 102 is implemented using an IVR system. The user calls the IVR number. The PSTN delivers the call to the UVR system in Step 300. The IVR system is then programmed to retrieve the user calling number, using the PSTN caller id support (step 302). If the user calling number is available, the system spells out the number to the user and asks for a confirmation in step 306. If the user confirms positively, the user calling number is then forwarded to the message application server 106 as described in step 204. If the user confirms negatively (step 306), or the IVR system does not detect the user calling number in step 302 (for example if the user is blocking caller id), then the IVR is programmed (step 304) to ask the user to enter his cell phone number. The phone number can either be entered using the telephone key pad, and the IVR system will detect the Dual Tone Multiple Frequency ("DTMF") tones, or alternatively using a voice recognition system. The details on how to program an IVR system to perform the steps described above are well known to those skilled in the art.

FIG. 9 is an alternative embodiment of step 202 that builds upon FIG. 7. In FIG. 8 the initial steps 300, and 302 are the same as in FIG. 8. The calling number supplied by the PSTN, or entered by the user is analyzed in step 320 to see if it corresponds to a cell phone number. There are multiple ways to perform this operation which are known to those skilled in the art. One possible implementation is to lookup the first six digits of the phone number in a database called the Local Exchange Routing Guide ("LERG") that contains information on all the PSTN switches. If the phone number corresponds to a cell phone number, the IVR is programmed to proceed to step 306. If the number does not correspond to a cell phone number, then the IVR is programmed in step 304 to prompt for a cell phone number as described before. In this alternative embodiment, step 322 was also added prompting the user for additional data, for example for a choice of an offer of interest or from a store of interest. Once all the additional data is captured, the user cell phone and the additional data is forwarded to the message application server 106 as described in step 204.

Having now described one or more exemplary embodiments of the invention, it should be apparent to those skilled in the art that the foregoing is illustrative only and not limiting, having been presented by way of example only. All the features disclosed in this specification (including any accompanying claims, abstract, and drawings) may be replaced by alternative features serving the same purpose, and equivalents or similar purpose, unless expressly stated otherwise. Therefore, numerous other embodiments of the modifications thereof are contemplated as falling within the scope of the present invention as defined by the appended claims and equivalents thereto.

For example, the techniques may be implemented in hardware or software, or a combination of the two. In one

US 7,403,788 B2

15

embodiment, the techniques are implemented in computer programs executing on programmable computers that each include a processor, a storage medium readable by the processor (including volatile and non-volatile memory and/or storage elements), at least one input device and one or more output devices. Program code is applied to data entered using the input device to perform the functions described and to generate output information. The output information is applied to one or more output devices.

Each program may be implemented in a high level procedural or object oriented programming language to communicate with a computer system, however, the programs can be implemented in assembly or machine language, if desired. In any case, the language may be a compiled or interpreted language.

Each such computer program may be stored on a storage medium or device (e.g., CD-ROM, hard disk or magnetic diskette) that is readable by a general or special purpose programmable computer for configuring and operating the computer when the storage medium or device is read by the computer to perform the procedures described in this document. The system may also be considered to be implemented as a computer-readable storage medium, configured with a computer program, where the storage medium so configured causes a computer to operate in a specific and predefined manner.

In a most preferred embodiment, the various components, such as the trigger system, the message application server, the offer application, etc., are implemented on one or more computer systems. The multiplicity of the computer system allow for the distribution of the workload in accordance with, e.g., the number of computer systems available and enables the system to function even in a subset of the computer systems experience one or more faults. The computers should be connectable to each other, for example, by means of 100Base-T Ethernet interfaces and corresponding 100Base-T Ethernet switches. In the most preferred implementation, each computer contains dual UltraSPARC® III processors, 1024 MB RAM, two 9 GB disk drives, and operates using the Unix™ compatible Solaris™ operating system. As will be appreciated, the specific hardware utilized can be varied in accordance with need, required capacity, and the preferred programming and operating environment, as well as in response to other factors.

What is claimed is:

1. A system for enabling targeted content delivery to a mobile device, said mobile device having a device address, said device address having associated therewith at least one unique identifier, said system comprising:

a message application server; and
a trigger system in communication with said message application server, said trigger system comprising:
a trigger client component configured to generate a trigger signal comprising a trigger action, user content request data and said at least one unique identifier; and
a trigger server component in communication with said trigger client component, said trigger server component configured to:

receive said trigger signal, and
send to said message application server said trigger signal for processing by said message application server; wherein said message application server is configured to: receive from said trigger system said trigger signal, and in response thereto:
derive said mobile device address from said at least one unique identifier,
generate content based on said user request data, and

16

send said generated content to said device address of said mobile device;

an offer application component:

an offer entry system in communication with said offer application component, and an offer database in communication with said offer application component for storing said generated content and said user request data, wherein said offer entry system is configured to: redeem said generated content,

generate content redemption information comprising said redeemed content, and send said content redemption information to said offer application component for storage in said offer database.

2. A system as in claim 1 wherein said message application server further includes a message application database for storing transaction information comprising said user request data and said device address.

3. A system as in claim 1 wherein said trigger client component is said mobile device.

4. A system as in claim 1 wherein said trigger system comprises:

a client application residing on said trigger client component for generating said trigger signal; and

a server application residing on said trigger server component in communication with said client application and said message application server, said server application for receiving and processing said trigger signal sent by said client application.

5. A system as in claim 4 wherein said client application is a WEB or WAP browser client component and said server application is a WEB or WAP server application component.

6. A system as in claim 1, wherein said trigger client component further comprises at least one input device.

7. A system as in claim 6, wherein said at least one input device is selected from the group consisting of a magnetic card reader, bar code reader, keyboard, keypad, touch pad, sensors, and any combination thereof.

8. A system as in claim 7, wherein said sensors include a wireless sensor and a biometric sensor.

9. A system as in claim 1 wherein said trigger client component is an account card and a reader and wherein said trigger signal is generated by swiping said account card through said reader and having said trigger system identify said unique identifier based on account card information.

10. A system as in claim 1, wherein said trigger system comprises an IVR system, said mobile device is a cellular phone, said device address is a cellular phone number and said trigger action is a voice call; said IVR system configured to process said trigger signal to acquire said cellular phone number of said cellular phone.

11. A system as in claim 1, wherein said trigger system comprises an IVR system, said mobile device is a cellular phone, said device address is a cellular phone number and said trigger action is a voice call; said IVR system configured to process said trigger signal to acquire said cellular phone number of said cellular phone.

12. A system as in claim 1, wherein said trigger system comprises a PSTN and a Phone Switch connected to said PSTN, said mobile device is a cellular phone, said mobile device address is a cellular phone number and said trigger action is a voice call; said trigger system configured to detect incoming call establishment requests from said PSTN and to process said trigger signal to acquire said cellular phone number of said cellular phone.

13. A system as in claim 1 wherein said mobile device is a network-enabled device.

US 7,403,788 B2

17

13. A system as in claim 1 wherein said mobile device is a cellular phone having a cellular phone number as said device address.

14. A system as in claim 1 wherein said device address is a calling number, a cellular phone number, an instant messaging address, an e-mail address or other addressing type.

15. A system as in claim 1, wherein said offer application component is further configured to:
receive said content redemption information and
check for and process valid redeemed content using a validation code.

16. A system as in claim 15 wherein said offer entry system is further configured to generate a physical representation of said generated content.

17. A system as in claim 16 wherein said physical representation of said generated content includes paper, card-stock, plastic or any other tangible medium.

18. A system as in claim 17 wherein said offer entry system is a point of sale (POS) terminal for redeeming and providing a physical representation of said generated content.

19. A system as in claim 17 wherein said offer entry system is a kiosk for redeeming and providing a physical representation of said generated content.

20. A system as in claim 1 further comprising at least one communications network wherein said trigger system communicates with said message application server via said at least one communications network and wherein said trigger client device system communicates with said trigger server device via said at least one communications network.

21. A system as in claim 1 wherein said generated content comprises a message, a coupon, an offer or a promotion.

22. A system as in claim 16 wherein said generated content is a tangible medium containing a bar code representation of said validation code.

23. A system as in claim 22 wherein said validation code representation comprises a bar code.

24. A system as in claim 15 wherein said validation code encodes information pertaining to said user, generated content, unique identifier or mobile device for the purpose of tracking redemption on a per user basis.

18

25. A system as in claim 15 wherein said validation code is a numerical or alphanumeric code.

26. A system as in claim 15 wherein said validation code is an image to be scanned.

27. A system as in claim 15 wherein said mobile device processes and stores said validation code.

28. A system as in claim 15 wherein said validation code contains one or more checksum digits whereby code input errors can be detected.

29. A system as in claim 15 further comprising at least one first external system coupled to said message application server; said at least one first external system for facilitating the generation, redemption, analysis, verification and/or delivery of said generated content.

30. A system as in claim 29 wherein said at least one first external systems includes enterprise application systems, back-end payment systems, CRM systems and loyalty systems.

31. A system as in claim 16 further comprising at least one second external system coupled to said offer application component, said at least one second external system facilitating the generation, redemption, analysis, verification and/or delivery of said generated content.

32. A system as in claim 31 wherein said at least one second external system includes enterprise application systems, back-end payment systems, CRM systems and loyalty systems.

33. A system as in claim 31 wherein said validation code is similar to a Credit Card or Payment Card number and wherein said at least one second external system is a backend payment system that processes said validation code.

34. A system as in claim 1 further comprising a mobile network in communication with said mobile device and wherein said message application server sends said generated content to said device address via said mobile network.

* * * * *

EXHIBIT B



(12) **United States Patent**
Trioano et al.

(10) **Patent No.:** **US 7,792,518 B2**
(45) Date of Patent: **Sep. 7, 2010**

(54) **SYSTEM AND METHOD TO INITIATE A MOBILE DATA COMMUNICATION UTILIZING A TRIGGER SYSTEM**

(75) **Inventors:** Michael Trioano, Waltham, MA (US); Mark Grindeland, Framington, MA (US); Gerald Hewes, Lexington, MA (US); Eswar Priyadarshan, West Roxbury, MA (US); Randall Snyder, Campbell, CA (US)

(73) **Assignee:** M-Qube, Inc., Watertown, MA (US)

(*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) **Appl. No.:** 12/177,093

(22) **Filed:** Jul. 21, 2008

(65) **Prior Publication Data**
 US 2008/0281910 A1 Nov. 13, 2008

Related U.S. Application Data

(63) Continuation of application No. 10/521,521, filed on Jan. 18, 2005, now Pat. No. 7,403,788.

(51) **Int. Cl.**
H04M 1/725 (2006.01)

(52) **U.S. Cl.** 455/412; 455/466; 455/414.1; 455/432.3

(58) **Field of Classification Search** 705/14, 705/10; 709/203; 455/412, 466, 445
 See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

6,560,651 B2 5/2003 Katz et al.
 6,925,307 B1 * 8/2005 Mamdani et al. 455/466

7,139,565 B2 11/2006 Fiatal et al.
 2001/0039514 A1 * 11/2001 Barenbaum et al. 705/14
 2002/0004746 A1 * 1/2002 Ferber et al. 705/14
 2002/0160776 A1 10/2002 Torabi
 2003/0005066 A1 1/2003 Lazaridis et al.
 2003/0074328 A1 4/2003 Schiff et al.
 2003/0100315 A1 5/2003 Rankin
 2003/0174814 A1 * 9/2003 Diacakis 379/80
 2003/0187938 A1 10/2003 Mousseau et al.

FOREIGN PATENT DOCUMENTS

KR 2001076121 A * 8/2001

OTHER PUBLICATIONS

PCT International Search Report, PCT/US03/22661, 4 pages.
 Provisional U.S. Appl. No. 60/397,435, filed Jul. 19, 2002, 21 pages.

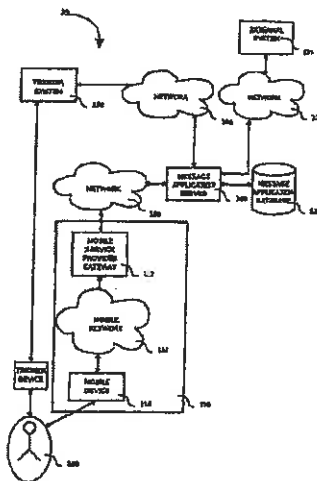
* cited by examiner

Primary Examiner—David Q Nguyen
 (74) *Attorney, Agent, or Firm*—Arent Fox LLP

(57) **ABSTRACT**

A system and method to enable a user to initiate a communication with an organization using a mobile communication device by means of a trigger system. A system and method to enable an organization to acquire a user mobile device address by means of a trigger system. A system and method to enable an organization to respond to a user by means of a trigger system and a message application server. A system and method to enable organizations to deliver mobile messages, coupons, offers and promotions to users mobile device by means of a combination of a trigger system, a message application server and an offer application.

13 Claims, 10 Drawing Sheets



U.S. Patent

Sep. 7, 2010

Sheet 1 of 10

US 7,792,518 B2

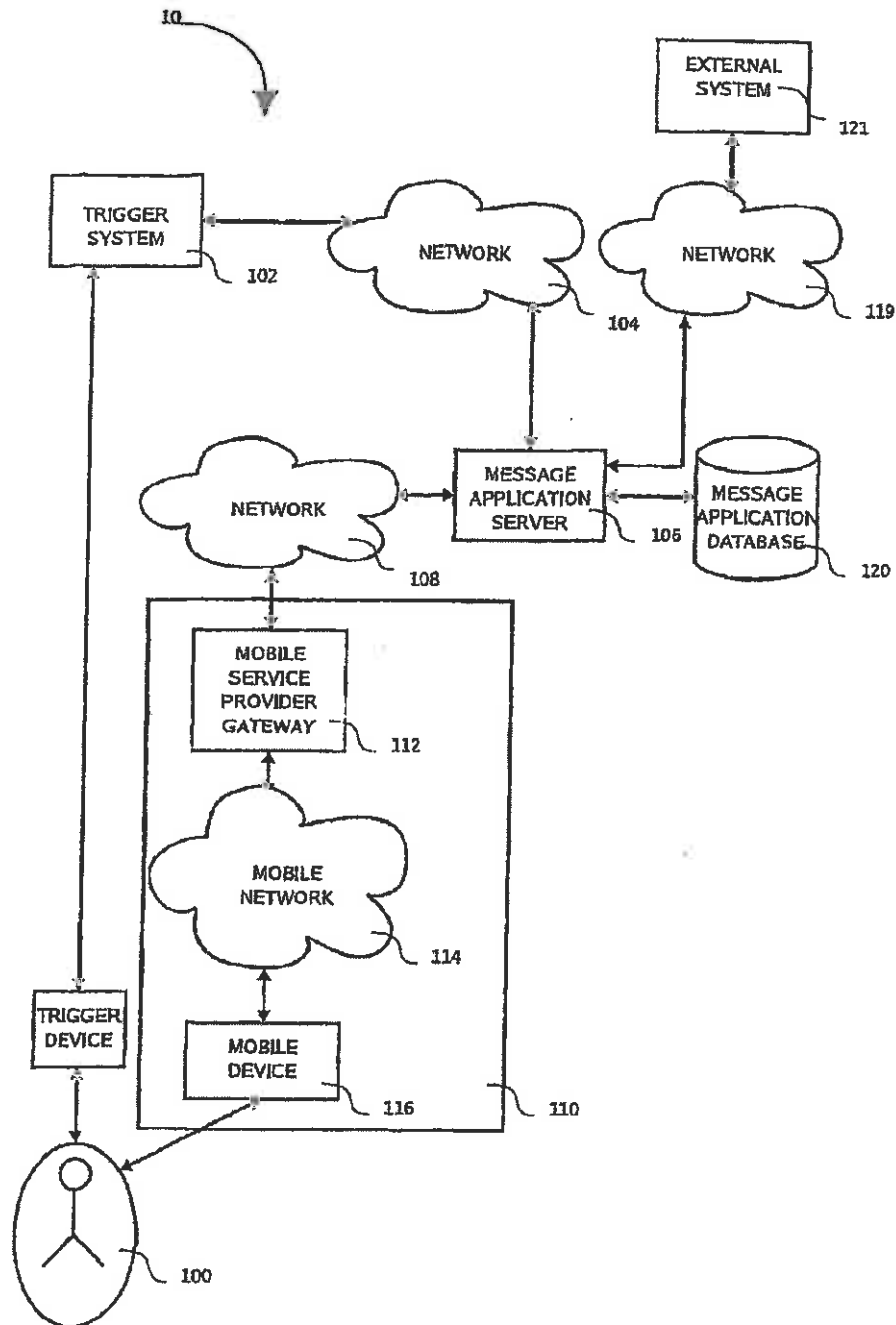


FIG. 1

U.S. Patent

Sep. 7, 2010

Sheet 2 of 10

US 7,792,518 B2

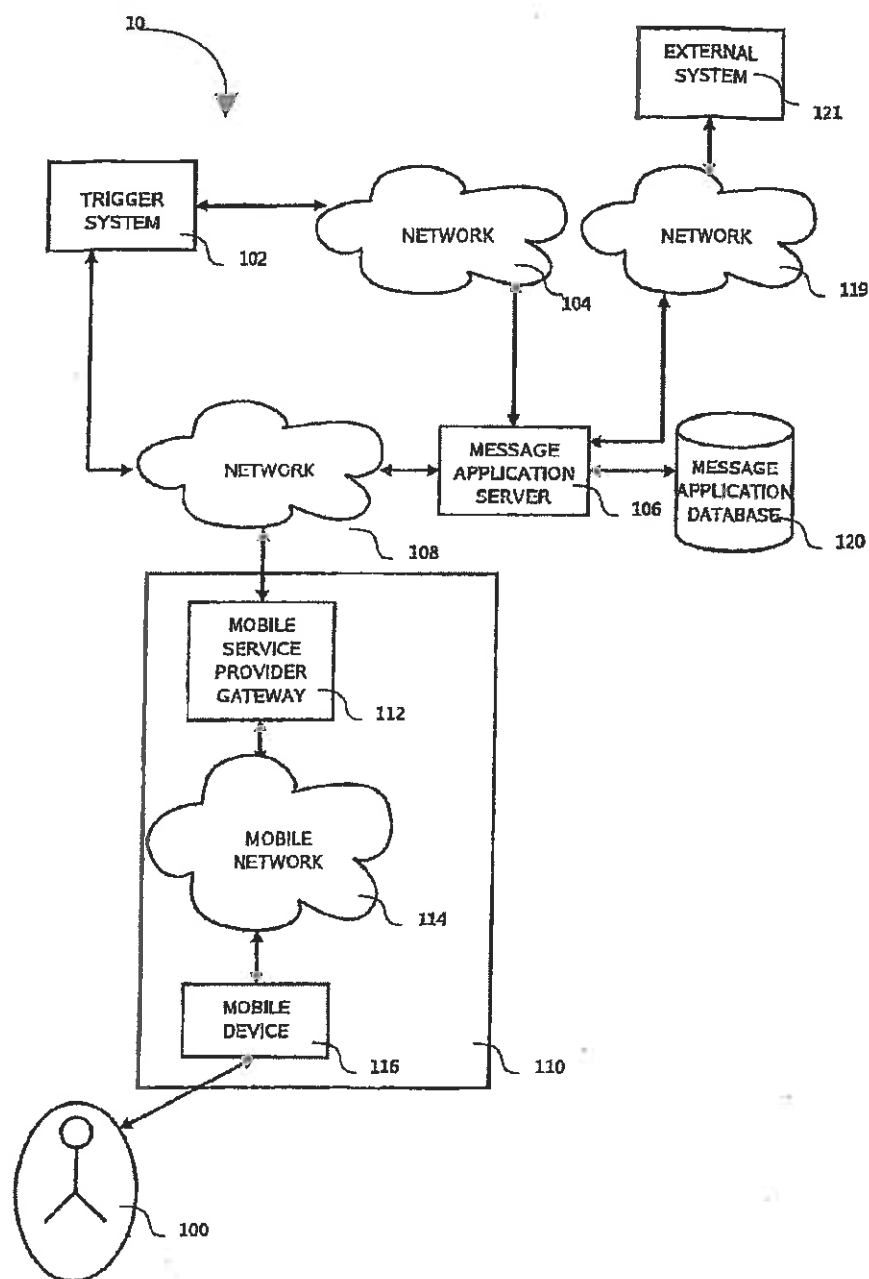


FIG. 1B

U.S. Patent

Sep. 7, 2010

Sheet 3 of 10

US 7,792,518 B2

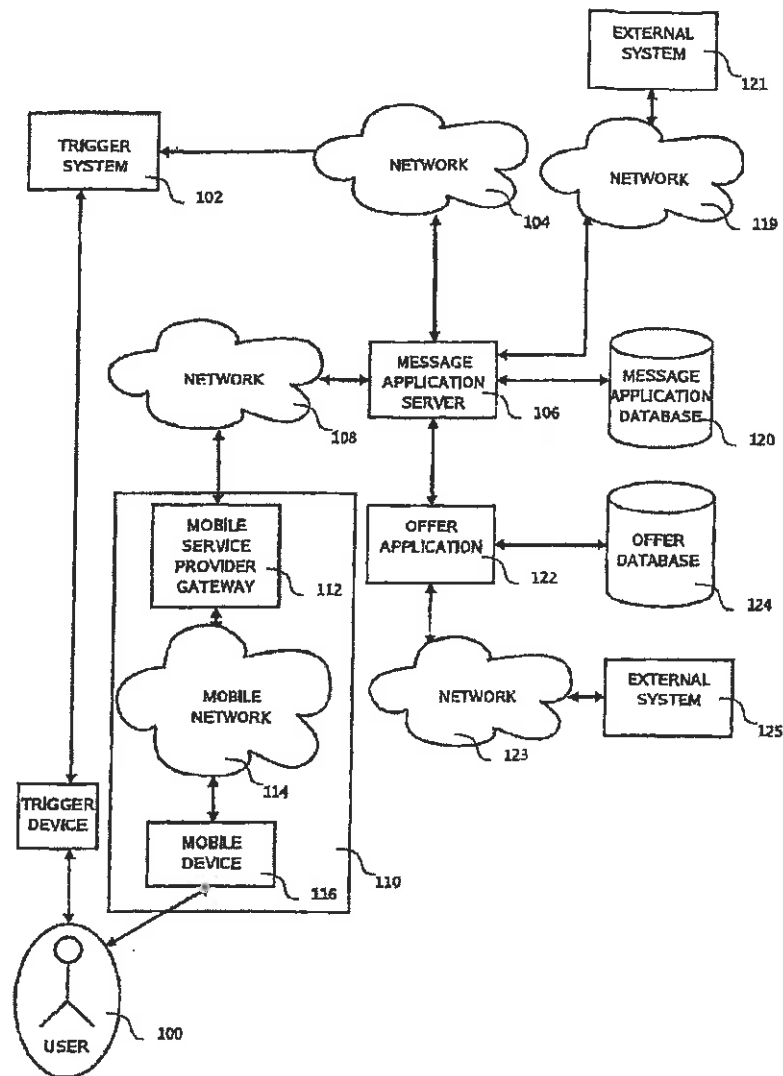


FIG. 2

U.S. Patent

Sep. 7, 2010

Sheet 4 of 10

US 7,792,518 B2

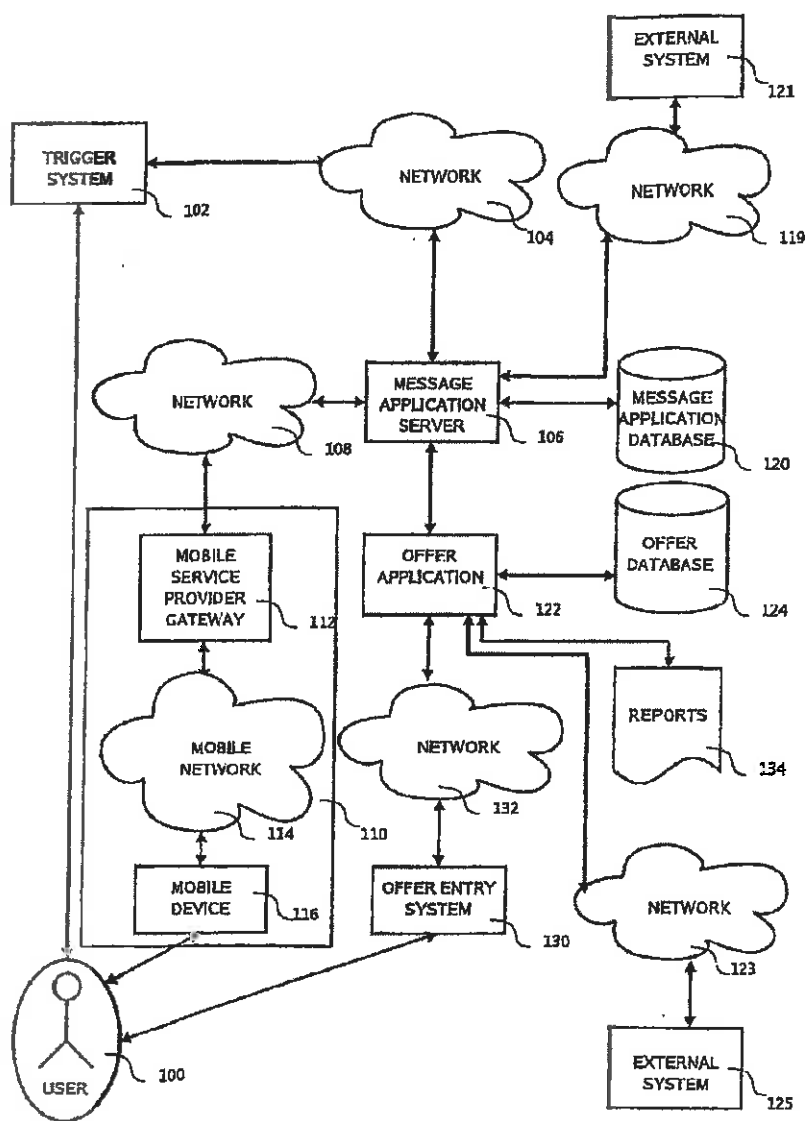


FIG. 3

U.S. Patent

Sep. 7, 2010

Sheet 5 of 10

US 7,792,518 B2

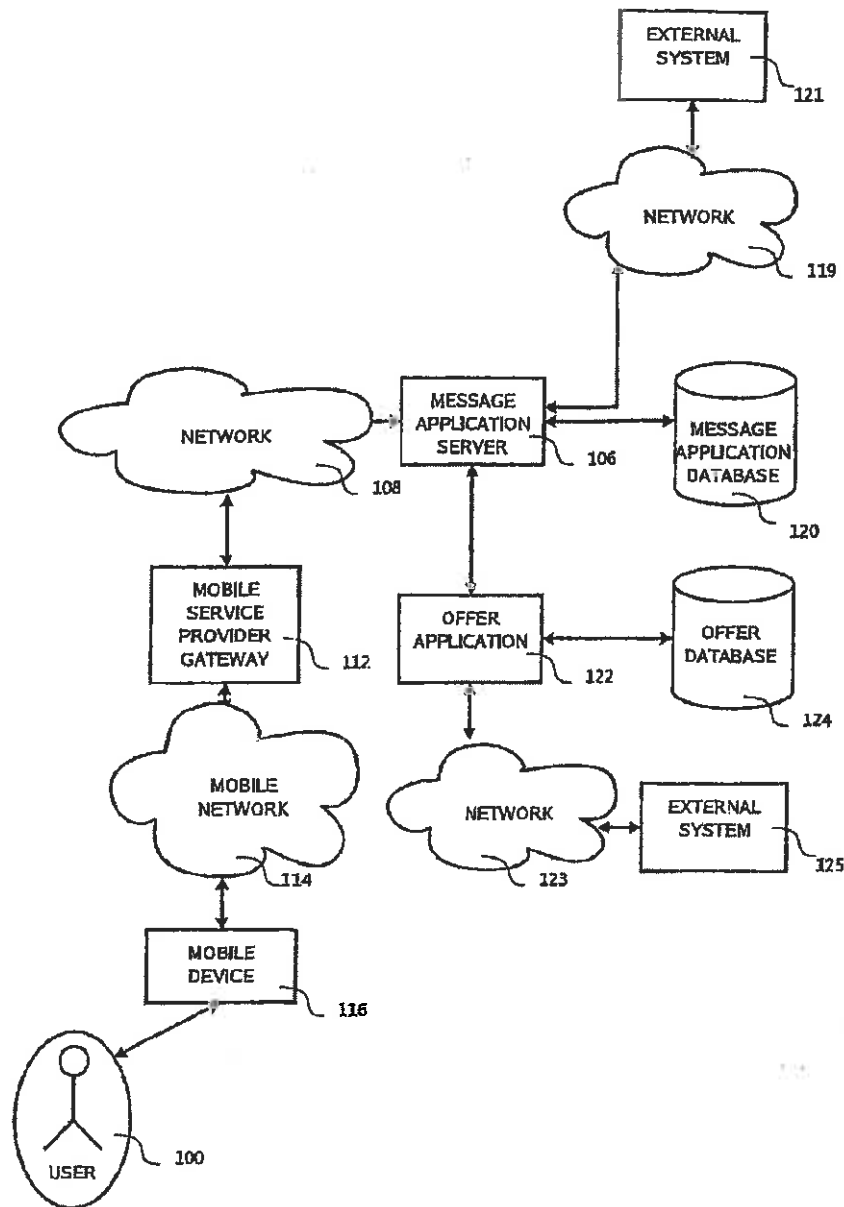


FIG. 4

U.S. Patent

Sep. 7, 2010

Sheet 6 of 10

US 7,792,518 B2

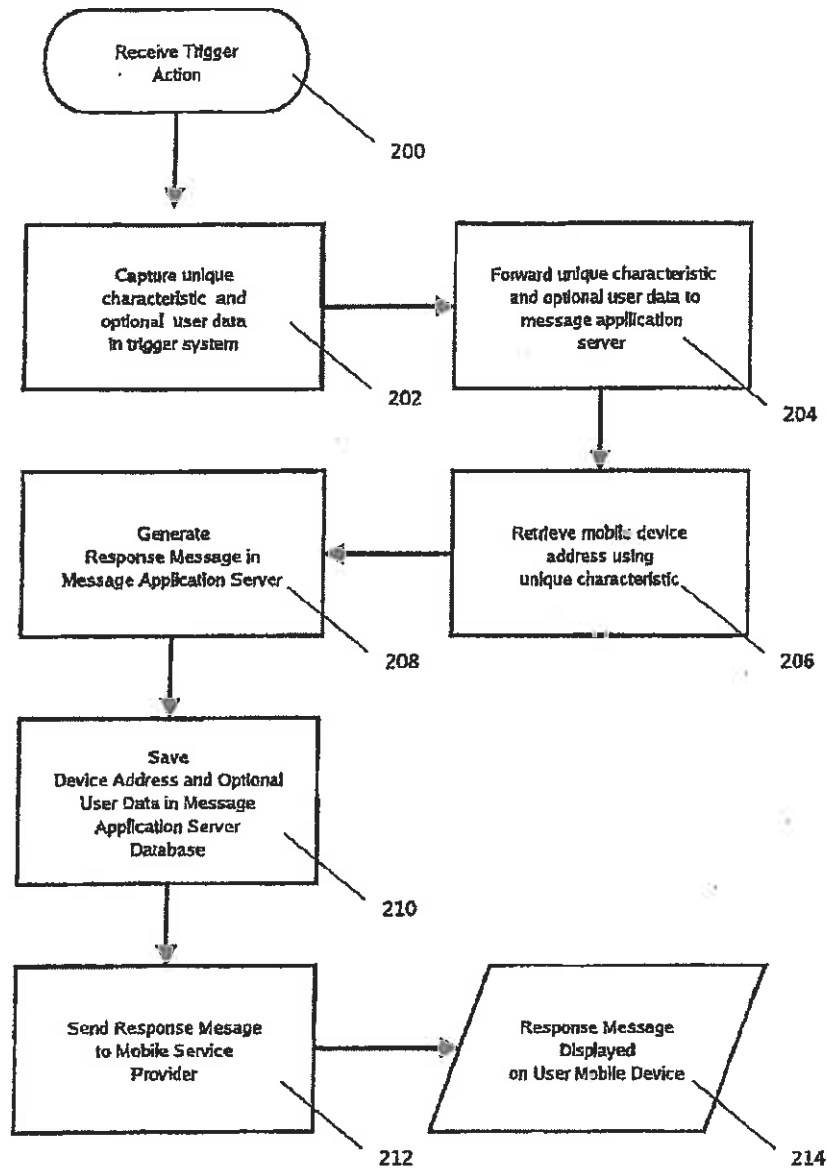


FIG. 5

U.S. Patent

Sep. 7, 2010

Sheet 7 of 10

US 7,792,518 B2

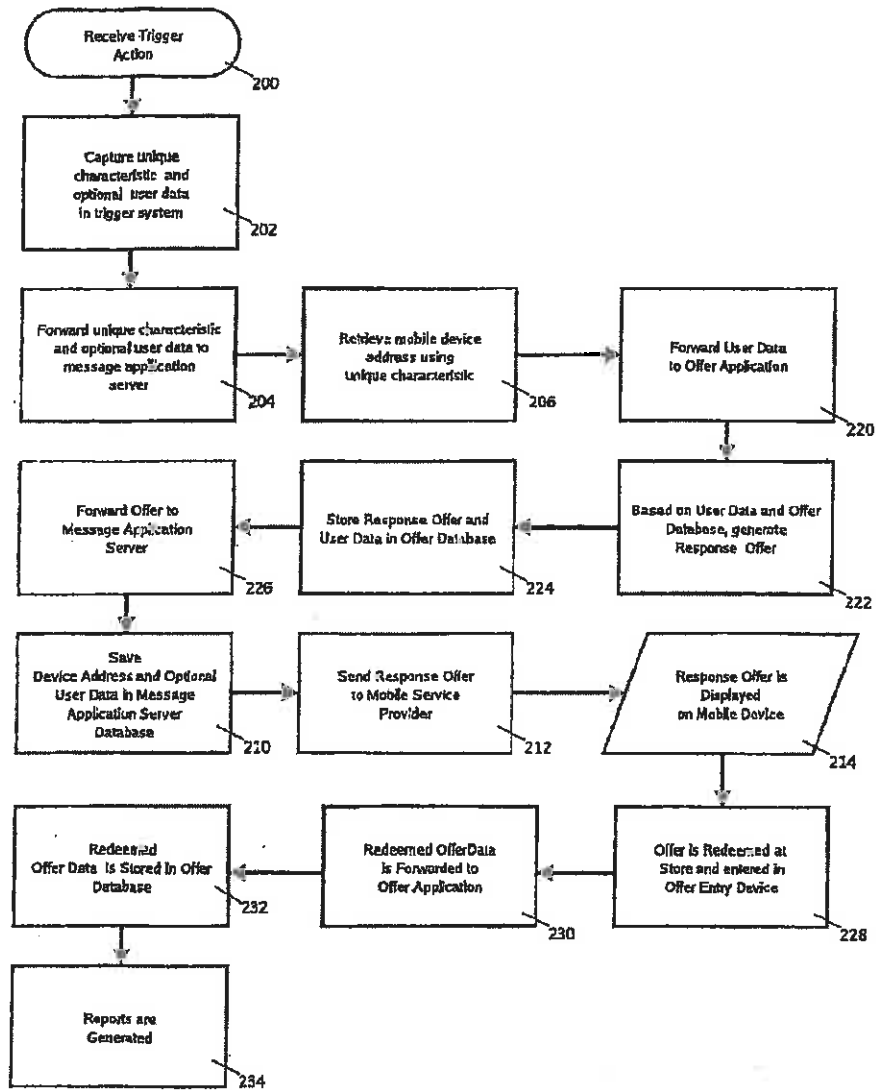


FIG. 6

U.S. Patent

Sep. 7, 2010

Sheet 8 of 10

US 7,792,518 B2

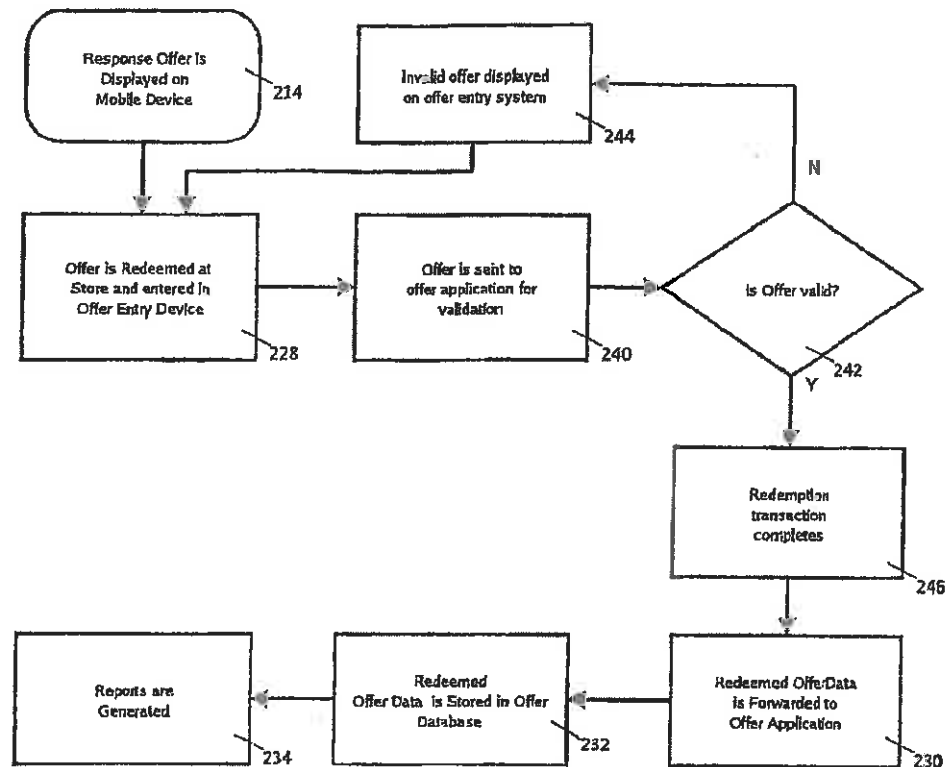


FIG. 7

U.S. Patent

Sep. 7, 2010

Sheet 9 of 10

US 7,792,518 B2

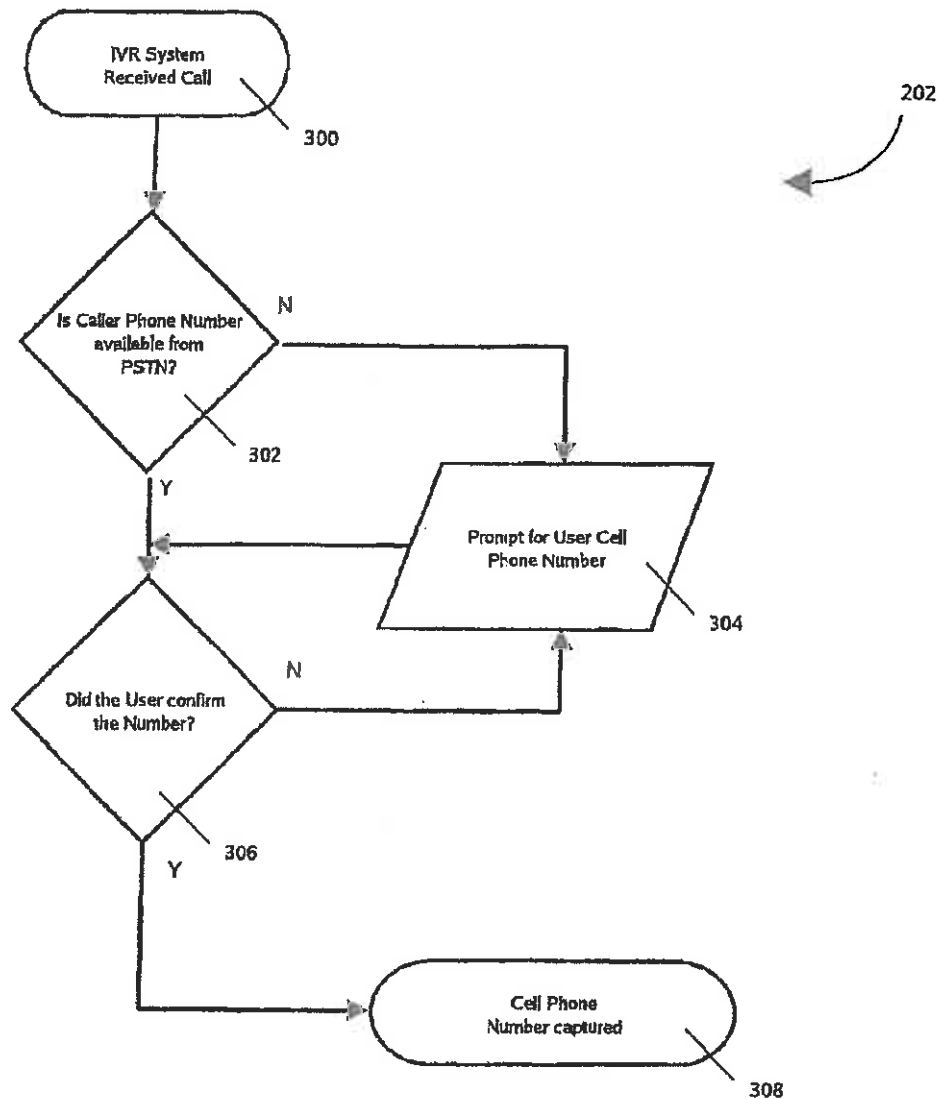


FIG. 8

U.S. Patent

Sep. 7, 2010

Sheet 10 of 10

US 7,792,518 B2

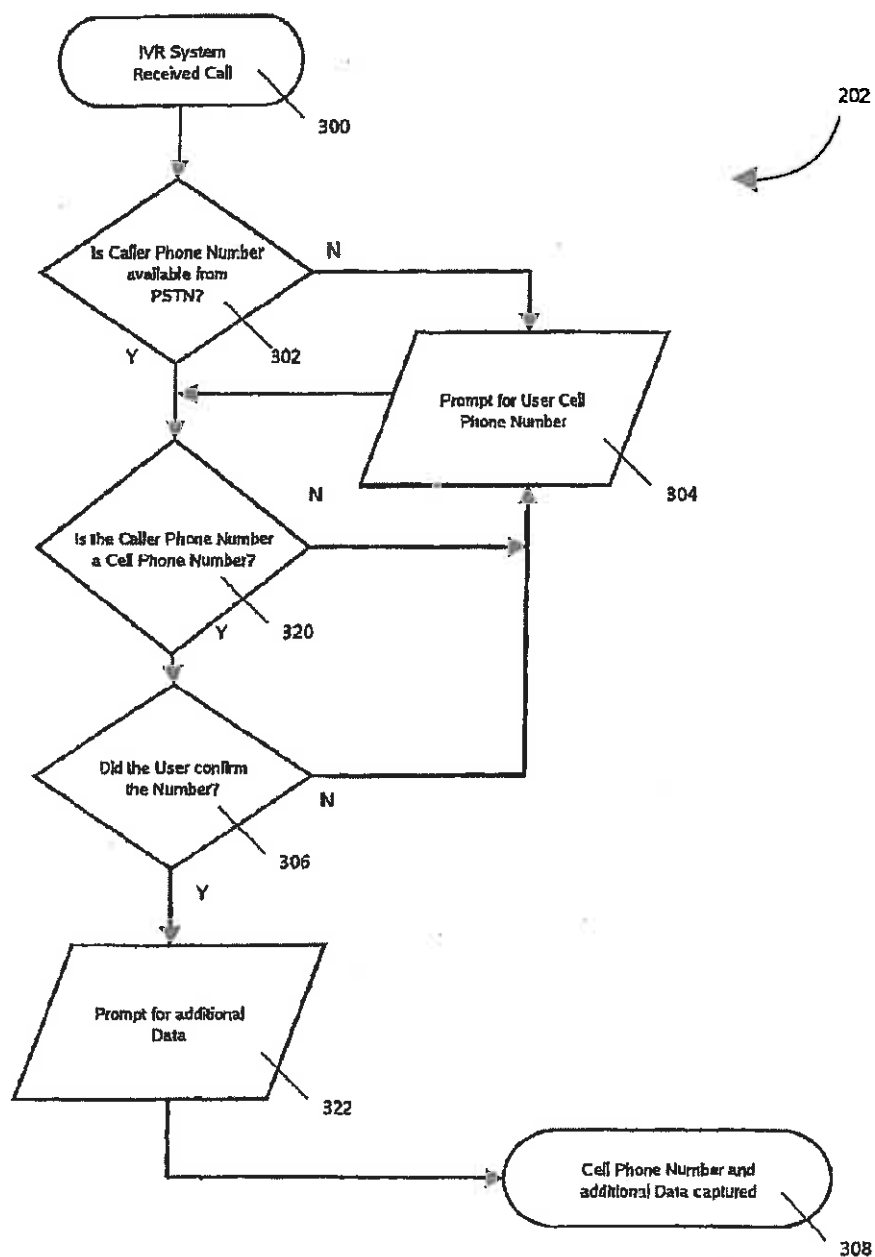


FIG. 9

US 7,792,518 B2

1

SYSTEM AND METHOD TO INITIATE A MOBILE DATA COMMUNICATION UTILIZING A TRIGGER SYSTEM

PRIORITY CLAIM

The present patent application is a Continuation of U.S. application Ser. No. 10/521,521, filed on Jan. 18, 2005 now U.S. Pat. No. 7,403,788.

This application claims the benefit of priority of U.S. Application No. 60/397,435, filed Jul. 19, 2002, the entire contents of which are incorporated by reference as if set forth at length herein.

FIELD OF THE INVENTION

This invention relates to enabling communications between users and organizations by means of data enabled mobile communication devices. More particularly this invention relates to a system, method and machine to enable organizations to execute direct marketing techniques and promotions via mobile communication devices.

BACKGROUND OF THE INVENTION

Global brands spend hundreds of billion of dollars annually in the United States on brand marketing and communications. Over the last decade, an increasing percentage of brand marketing budgets have been spent in direct marketing channels (e.g., direct mail, telemarketing, email, etc.). In fact, total brand spending on direct mail now exceeds that of broadcast television. Given direct marketing's unique capabilities, such as precise targeting, the ability to drive specific behaviors, and highly measurable results, marketers are expected to continue spending heavily in direct channels.

One of the most significant new direct marketing opportunities is the emergence of the wireless channel. The wireless channel provides marketers the unmatched ability to reach the individual (not just the household), in a time- and event-sensitive way, with attractive and measurable marketing return on investment ("ROI"). In Europe, hundreds of brands are beginning to utilize the wireless data channels and are committing a sizeable portion of their communications budgets over the next year to wireless.

An organization wanting to use data messaging for communication with its user base needs to make it easy for them to participate. The organization needs to have a means to obtain a user's mobile device address to be able to communicate with him using his mobile device data capabilities. The organization needs to obtain the user permission to be able in the future to send new messages, coupons, offers or promotions, to the user's mobile devices.

There are multiple ways to for a user to initiate a communication with an organization and for an organization to obtain a user's mobile device address, but in this invention we are primarily focused on methods to initiate a communication when said user is in a mobile setting, such as a public environment as opposed to a home or office environment. In a mobile setting, there needs to be an easy and quick way for said user to specify his interest in starting a communication and for the organization to obtain said user's mobile device address whereby the communication can occur.

Once the communication is initiated, a message oriented application can capture the user's mobile device address in a database, and respond back with a message, a coupon, an offer or a promotion.

2

It is important that said user only receive future organization originated ("push") communications only if he has elected to do so. A system and method to perform communication between users and organizations needs to support an easy way to either opt-in or opt-out from receiving future communications.

An example of a situation where a user may be interested in initiating a communication with an organization is the case of the organization being a brand sponsoring some event; for example a contest, building brand and product awareness where the user may win some prizes. Other examples include receiving offers, coupons, promotions or discounts on their mobile device.

The communication, its goals, its benefits and how a user can initiate it is typically displayed using a traditional channel such as print media, product packaging, bar coaster, billboard, sign, posters, TV or radio advertisements, candy wraps, etc. . . . This process is called the "call to action" message. It is easy to see that if participating is easy to accomplish, such communications can have a wide impact for both users and organizations.

One very common application of this invention is to deliver coupons, offers and promotions to users that have requested them. There is a cost for an organization to provide, promote and deploy systems to execute such mobile coupon, offer and promotion programs. Hence it is an important requirement that a system be able to measure redemption rates to compute the effectiveness of the program. In addition, much better coupons, offers and promotions can be given to individual users if their past individual receptiveness is known—which makes uniquely identifying the coupon, offer and promotion important.

There is much economical value in being able to deploy a system where users can receive messages, coupons, offers and promotions at the time of their choosing as well as occasionally receiving push specials thereby allowing the organization running the program to develop a comprehensive loyalty program bringing value to both the user and the organization. To support such a program, a system needs to exist to enable users to enroll, participate and receive occasional "push" messages, coupons, offers and promotions that leverages the capabilities of mobile data communication devices and Customer Relationship Management and Loyalty systems.

In addition, some of the offers, coupons and promotions can be valuable enough that the organization giving them out wants to make sure they are used only once. Examples of such compelling offers are very deep discount to join the offer program—think about book clubs that sell you your first three books for \$1 to join the club. In this case, the offer needs to be verified that it has not already been redeemed. Such a step is critical with the technologies described in this invention where it is often easy to forward or forge a message on a mobile device.

The primary limitations with existing methods to initiate a communication between an organization and a user using a mobile device have to do with: the time, effort and lack of convenience of triggering the communication using current systems; the lack of common service addresses for users to initiate the communication with an organization in some common existing messaging technologies; and the lack of

US 7,792,518 B2

3

familiarity on the part of users on how to initiate a communication using their mobile device.

PRIOR ART

Obtaining the user's mobile device address in a mobile setting to allow for communication is not always straightforward for some classes of mobile devices, in particular digital cell phones. Almost all digital cell phones sold today have one or more data messaging capabilities. These may include, but is not limited to, Short Message Service ("SMS"), Enhanced Messaging System ("EMS"), Multimedia Messaging Service ("MMS"), Wireless Application Protocol ("WAP") and mobile e-mail. The large number of digital cell phones in the U.S. makes solving the problem of obtaining cell phones data address a critical problem to be solved.

One solution that is used by some wireless carriers to allow a user to initiate a communication using a cell phone with an organization, is to use a Mobile Originated ("MO") message sent to a service access code. In the case of a cell phone, a service access code can either be a short code (a number with less than the regular 10 digits defined by the North American Numbering Plan ("NANP"))—for example "2327"—or a regular NANP 10 digit number. A user that wants to respond to a "call to action" message sends an MO message to the organization service access code setup by his cell phone carrier.

While the above technique using MO messages works can work in geographies that support standardized service access codes across wireless carriers, it is much less effective in countries that don't. In countries with no standardized service access codes, like the U.S., it is awkward for an organization to publish different service access code addresses for each wireless carrier. In addition the MO technique is not effective in geographies where cell phone users are not familiar on how to send MO messages. The situation is compounded by the fact that some wireless carriers currently do not offer third parties the ability to receive MO messages sent to them.

It is possible to solve the problem of lack of standardized service access codes by using an e-mail address instead of the typical telephone digit numbers used for SMS, EMS and MMS. Using e-mail is possible because most wireless carriers offer the ability for users to send and receive e-mails from their cell phone, either directly using Simple Mail Transfer Protocol ("SMTP") or indirectly via SMS, EMS, MMS, WAP, or hyper text markup language ("HTML") by means of an SMTP gateway provided by the wireless carriers. A service using e-mail as its service address requires that users enter the service e-mail address when composing their initial MO message. Unfortunately, it is often extremely cumbersome for users to enter an e-mail address composed of alphabetical letters and symbols using a cell phone numeric keypad. For example, on a Sony-Ericsson T68i phone it takes 34 key presses (assuming no mistakes) to enter "fun@m-qube.com". Hence user response rates will be extremely low with this approach.

Another alternative that can be used to solve the problem of lack of standardized service access codes is to deploy modem banks of Personal Computer ("PC") based wireless data cards. Said wireless data card is like a miniature cell phone with its own phone number. With the peer-to-peer SMS interoperability available in many countries, any MO message sent to said wireless data card phone number would be delivered to it, and by extension to the message application server connected to said PC. While this approach effectively works around the problem of lack of standardized service access codes, it suffers from severe scalability problems (a

4

card typically cannot handle more than 2-3 messages per second, and most cards are not designed to be operated 24x7x365.)

Another alternative is to use a range of numbers for the service access codes normally allocated to a wireless carrier for use by its subscribers, and reconfigure the carrier data network elements to forward any MO messages sent to said range, not to a physical cell phone, but instead to the organization's message application server using a data network such as the Internet. This solution builds upon SMS interoperability and is scalable. But it requires that the organization have a relationship with the wireless carrier offering said range, that said wireless carrier have the capability to offer this service to organizations, and that other wireless carrier allow this to happen.

An equally critical consideration is the expertise required from users to send an MO message using the native mobile device data messaging interface. In particular, not all cell phone users know how to originate a MO message using their cell phone. Another method is required to allow them to participate before they become more familiar with their cell phone messaging capabilities. Once a cell phone user receives a message, it is much easier to reply to it since most cell phone handsets provide some guidance on how to do so.

Or, the user may be familiar with messaging, but the time involved may be a limiting factor. For example, many users may not be willing because of the inconvenience to text-in a message when entering in a supermarket to receive tailored coupons, but may be more willing to use other methods described in this invention to trigger the offers. This problem is especially acute for mobile messaging technologies that don't rely on number for addresses, but on long strings like e-mail or instant messaging screen names. While presumably it is possible to enter a long string using these mobile devices, this is usually a somewhat slow process. A faster trigger mechanism is required.

Hence existing methods using the native messaging capabilities of a user's mobile device to support mobile originated messages to allow said user to start a communication with an organization service are not effective in many situations or geographies. The limitations of the existing methods makes using the mobile channel as a direct marketing channel not a cost effective channel; as user response rates would be too low to cover the campaign costs.

OBJECTS AND ADVANTAGES

The specific object and advantages for this present invention are:

- a) Provides for an alternative to using the mobile device native data communication interface in cases where there are no unique service address (common service access codes), no publicly supported service side infrastructure, or the user is unfamiliar with his device data messaging capabilities.
- b) Provides for faster and easier methods to trigger a communication between an organization and a user than by using the device native mobile originated messaging capabilities.
- c) Some of the embodiments described in the invention, like using an interactive voice response ("IVR") system as the trigger system, make it much easier to collect additional information such as opt-in permission for future communication or offers, or more information, such as offers of interest to the user.

US 7,792,518 B2

5

d) Enables simple, fast, practical and economical means to instantly deliver offers, coupons and promotions to users in public places.

Further objects and advantages of this present invention will become apparent from a consideration of the drawings and ensuing description.

SUMMARY OF THE INVENTION

The present solution solves the aforementioned problem not by means of the user mobile device native data messaging services but by means of an external trigger system not based on the user mobile device data messaging capabilities.

Once the trigger system has captured a unique identifier capable of being mapped to the user mobile device address, a Mobile Terminated ("MT") message is sent to the user. From then on, the message application server is capable of future communications. The messages sent to the user can include menus and simple instructions removing the need for the user to ever originate a sophisticated MO message.

In one embodiment of the invention, said unique identifier is the mobile device address itself. In another embodiment of the invention, said unique identifier can be an identifier that is then used to retrieve the mobile device address. An exemplary embodiment uses an account number as the unique identifier, and then retrieving the mobile device address using the account number. The details on how the mobile device address is retrieved using the account number is well known to those skilled in the art. One possible implementation is to store the mobile device address in a database using the account number as the key to a data record holding the mobile device address. Other exemplary embodiments use a loyalty card number, a social security number, a membership number or employer number as the unique identifier.

This invention applies to any message oriented data communication system, including, but not limited to SMS, EMS, MMS, WAP, hypertext markup language ("HTML"), XHTML and other HTML derivatives, mobile e-mail, client side mobile device execution environments such as Java 2 Mobile Edition ("J2ME™"), Brew™, Linux™, or Symbian OS™.

A further aspect of the invention, a system and method is also provided to deliver follow-on messages from the organization once the user mobile device address is captured.

A further aspect of the invention, a system and method is also provided to deliver, an instant mobile coupon, offer, or promotion that can be redeemed providing for a complete system and method to deliver messages, coupons, offers and promotion to users.

In one embodiment, the present solution is a network based system and method, consisting of a trigger system, a message application server and a mobile device service provider system. It allows any user equipped with a mobile device capable of receiving messages to initiate a sequence whereby said user can receive one or more messages from said message application server. Furthermore, said message application server can store said user mobile device address in a database for later communications from said message application server to said user.

The organization service is presented in a traditional media format, including but not limited to, on a print advertisement, on a product packaging, on a bill-board, on a poster, on a flyer, on a coaster, on a candy wrap, on a store display, in a TV ad, in a radio ad, on an Internet site. The presentation includes instructions on how the user can interact with the trigger system. The presentation is called the "call to action" message.

6

In one embodiment, the trigger system confirms the user mobile device address, handles exceptions, and optionally obtains additional data from the user or opt-in permission if applicable. Once the session with said trigger system is completed, the trigger system informs the message application server which sends a message to the user mobile device.

BRIEF DESCRIPTION OF THE DRAWINGS

The foregoing and other features of the present invention will be more readily apparent from the following detailed description and drawings of the illustrative embodiments of the invention in which:

FIGS. 1 and 1B depicts aspects of an exemplary embodiment of the present invention in accordance with the teachings presented herein.

FIG. 2 depicts an alternative exemplary embodiment of the present invention in accordance with the teachings presented herein containing additional components to deliver messages, coupons, offers or promotions.

FIG. 3 depicts an alternative exemplary embodiment of the present invention in accordance with the teachings presented herein containing additional components to track the redemption of coupons, offers or promotions.

FIG. 4 depicts an exemplary embodiment of delivering follow-on Mobile Terminated messages once the user mobile device address is known.

FIG. 5 is a functional block diagram of the method of capturing a user mobile device address and using it to send a message to the user.

FIG. 6 is a functional block diagram containing the additional steps to deliver messages, coupons, offers or promotions to a user.

FIG. 7 is a functional block diagram of an exemplary embodiment of coupons, offers or promotion redemption.

FIG. 8 is a functional block diagram to capture a user cell phone number in an embodiment of this invention where the trigger system is an IVR system.

FIG. 9 is a functional block diagram of an alternative exemplary embodiment using an IVR system as a trigger system containing the additional steps of verifying if the user calling number is a wireless phone number and capturing additional data.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Aspects, features and advantages of exemplary embodiments of the present invention will become better understood with regard to the following description in connection with the accompanying drawing(s). It should be apparent to those skilled in the art that the described embodiments of the present invention provided herein are illustrative only and not limiting, having been presented by way of example only. All features disclosed in this description may be replaced by alternative features serving the same or similar purpose, unless expressly stated otherwise. Therefore, numerous other embodiments of the modifications thereof are contemplated as falling within the scope of the present invention as defined herein and equivalents thereto. Hence, use of absolute terms, such as, for example, "will," "will not," "shall," "shall not," "must," and "must not," are not meant to limit the scope of the present invention as the embodiments disclosed herein are merely exemplary.

Turning to FIG. 1 there is shown the basic architecture of one embodiment of a system 10 for capturing a user mobile device address by means of a trigger system. The system

US 7,792,518 B2

7

comprises a trigger system 102 which can be triggered by a user 100 using a trigger device. Said trigger system 102 is connected by means of a data network 104 to a message application server 106. The message application server 106 is further connected to a mobile service provider or carrier system 110 by means of a data network 108 and the mobile service provider gateway 112. The mobile service provider gateway 112 acts as a gateway into the mobile service provider network 114. The mobile service provider gateway 112 is further capable of sending messages to the user 100 mobile device 116 by means of the service provider mobile network 114. Said user 100 can then read messages sent to his mobile device 116.

The trigger system 102 is any system capable of capturing a unique identifier capable of being transformed into the user mobile device 116 messaging address, and optionally other data. The system described in this invention requires that the trigger system 102 or the message application server 106 be able to directly or indirectly retrieve the mobile device 116 address based on said unique identifier captured by the trigger system 102, and be able to use the mobile device address to send messages to the mobile device 116. Once the trigger system 102 is triggered by user 100, it sends said mobile device messaging address or said user unique identifier along with any other captured data to the message application server 106 by means of data network 104.

The trigger system 102 can be triggered by the user either by using his mobile device 116, or by using any other system or method.

In one exemplary embodiment of this invention, the trigger system is a computing device equipped with a card reader where the magnetic stripe of the card contains said unique identifier.

In one exemplary embodiment of this invention, the trigger system is a computing device equipped with a bar code reader. The user swipes an object with a bar code containing said unique identifier, such as a key chain card.

In one exemplary embodiment of this invention, the trigger system consists of Radio Frequency Identification ("RFID") readers located in public areas, for example at the doors of stores. The user carries an object with an embedded Radio Frequency Identification RFID tag containing said unique identifier. The trigger system is simply triggered by the user when walking through or near the RFID readers.

In one exemplary embodiment of this invention, the trigger system is a client application running on the user mobile device combined with a server side system. The communication is triggered when the user activates the application and instructs it to trigger the interaction. The client application, by means of the data messaging capabilities of the mobile device notifies the service side system, which can be the message application server, to initiate the communication.

In one exemplary embodiment of this invention, the trigger is a client application running on the user mobile device combined with a local receiver system. The communication is triggered when the user activates the application and instructs it to trigger the interaction. The client then uses a local networking infrastructure such as infra red, Bluetooth®, WiFi or any other local wireless protocol to send the trigger to said receiver system which forwards it to the message application server.

In one exemplary embodiment of this invention the trigger system is any system capable of performing biometric or user identification of said user. Examples of such system include but is not limited to finger-print readers, eye readers, voice identification and video camera identification.

8

In one exemplary embodiment of this invention, the trigger system is a kiosk where the user enters the unique identifier in the kiosk—for example using a keyboard, a keypad or a touchscreen.

In one exemplary embodiment of this invention, the trigger system 102, is an IVR system accepting phone calls which is programmed to capture said unique identifier. Various techniques known to those of skill in the art can be used to capture said unique identifier. This includes but is not limited to accepting Dual Tone Multi Frequency ("DTMF") or using voice recognition. The user triggers an interaction with the system by calling a phone number mapping to the IVR system and entering at the prompt said unique identifier and any additional data requested by the IVR. At the end of the call, all the captured information is forwarded to the message application server.

In one embodiment of this invention, the trigger system 102 is an IVR system and the mobile device 116 is a data enabled cell phone or any data device capable of receiving messages sent to a phone number address as described previously. In such embodiment, the IVR system can be further programmed to automatically capture the calling number. Capturing the calling number is very common in IVR systems using the Public Switch Telephone Network ("PSTN") Caller Id infrastructure. If the phone call is made using said cell phone, and the calling number is made available to the IVR, then the step of capturing the cell phone number can be further accelerated by spelling out the number and asking the user to validate the number. For example, the confirmation can be achieved using the following message: "You called from XXX-XXX-XXXX, if this is correct press 1, to enter a different phone number press 2". If the user confirms the number then the IVR can move on to capturing the optional data. If the user does not confirm the number, then the IVR can prompt the user for a new mobile device phone number. This last case is useful for example if the user called from a land based line and the IVR recognized the land line number. If the IVR does not receive the calling number from the PSTN, then the IVR system is programmed to directly prompt the user for his mobile device phone number.

In one exemplary embodiment, the trigger system 102 is wireless card attached to a computing device as described earlier. In the prior art section, we mentioned that wireless data cards suffer from scalability limitations. In this embodiment of the invention, the wireless data card is used only as a trigger system to receive the first MO message. All follow-on messages can then be sent to the user mobile device 116, using the mobile device 116 mobile service provider specific short code for this program. This invention overcomes the lack of standardized short codes in certain geographies and the lack of scalability of PC based wireless cards by using the wireless card only as a trigger system and not for subsequent message delivery. For example, the user would send an initial MO message to the wireless data card number, say NNN-NNN-NNNN which would be routed to the wireless data card using the carrier peer-to-peer infrastructure. The response from the message application server 106, would then use a separate service address for each carrier. Carrier A may use a five digit short code XXXXX, carrier B a six digit short code XXXXXXX, and carrier C a normal ten digit number MMM-MMM-MMMM. When the user receives the message, he can easily reply back and the fact that each user may be using a different address because they have a different wireless carrier is not an issue.

In one exemplary embodiment, the trigger system 102 is a phone switch. The phone switch is connected to the PSTN SS7 network. Upon receiving a call establishment request, the

US 7,792,518 B2

9

phone switch would refuse such request, capture the user calling number and forward said caller number to the message application server 106. The advantage of this embodiment is that neither the user nor the organization is billed for the call, since it was not completed, and the organization does not incur an IVR cost. The downside is additional data cannot be captured on the user, and the end user experience is probably strange as the call is not accepted.

In another embodiment, the trigger system is a computing device where the user supplies her mobile device address connected to the message application server using a data network, including but not limited to the Internet. In another embodiment, the trigger system is a network accessible computing device that the user connects to using another device—for example a web and WAP application accessed from a client computer using a browser—connected to the message application server using a data network.

The presented embodiments for the trigger system 102 are illustrative only and not limited to the ones presented. Numerous other embodiments of the trigger system 102 are contemplated as falling within the scope of this invention.

The data network 104 is any data network using any messaging protocol. In one exemplary embodiment, the network is based on TCP/IP and the trigger system 102 forwards the unique identifier and optional data using a Web Service call based on the Simple Object Access Protocol ("SOAP").

The message application server 106 is any computing server designed to process messages. It is programmed to be able to execute instructions upon receiving incoming messages from mobile devices, such as mobile device 116, and from any other external source. One of the instructions that the message application server is capable of executing is sending messages out to mobile devices. One of the event requests capable of triggering the message application server 106 to execute said instructions is the receipt of a notification that a user triggered the trigger device 102.

In one exemplary embodiment, the message application server 106 is implemented as a cluster of Java 2 Enterprise Edition ("J2EE") components running on commonly available computer hardware running commonly available operating systems. In one exemplary embodiment, the message application server 106 is implemented using the Jboss™ Java application server and uses an Oracle® database to maintain persistent data. In one exemplary embodiment the dialog instructions to execute upon receiving an MO message or a trigger requests are implemented in one or more extensible markup language ("XML") document(s). Multiple other embodiments of the message application server are possible and known to those of skill in the art.

In one preferred embodiment, the message application server 106 is additionally connected to a message application database 120. The database can be used as part of the implementation of the message application server. In one exemplary embodiment, the database stores data on the active communication programs, including but not limited to, program data; user data; user session data; system logs. The usage of a database to implement sophisticated server applications is well known to those of skill in the art and many possible usage of the database is possible and within the scope of this invention.

The message application server 106 is connected to one or more service provider gateway 112 using any suitable data network 108. In an exemplary implementation, the data network is the Internet using a virtual private network ("VPN") using the short message peer-to-peer ("SMPP") protocol. Other exemplary implementations use the Internet without a VPN, use private TCP/IP based connections ("leased line"),

10

or use a dedicated X.25 connection or any other available data network and protocol. The message application server 106 can simultaneously support multiple mobile service providers systems 110 and mobile device 116 technologies and hence can be connected to multiple service providers systems 110. The message application server 106 can be similarly connected a plurality of trigger system 102.

The message application server 106 can send, and optionally receive, messages to and from the mobile device 116, by means of the mobile service provider system 110. The actual details of the mobile service provider infrastructure are not relevant to this present invention and in practice take many forms.

In one exemplary embodiment, the mobile provider system 110 is broken down into a mobile service provider gateway 112 responsible for interfacing with the message application server 106 by means of data network 108. Using methods known to those skilled in the art, messages can be exchanged between mobile devices, such as mobile device 116 and the mobile service provider gateway 112 by means of a mobile network 114.

The mobile device 116 is any device a user can carry along with him that is capable of receiving data messages from at least the message application server 106 by means of the service provider system 110. In general, the mobile device 116 is also capable of sending messages to the message application server 106 as well as being able to send and receive messages to other mobile devices and other service applications. More capable devices can also send messages, or send and receive more complex messages than text messages such as multi-media messages.

In one embodiment of the invention, the mobile device 116 is a data enabled cell phone, or any data device capable of receiving and sending messages sent to a phone number address. The later can include wireless enabled personal data assistants ("PDA") or any other computing device capable of receiving messages sent to a phone number.

In one exemplary embodiment of the invention, the mobile device 116 is a data capable device capable of receiving and sending messages using e-mail protocols, including but not limited to SMTP, Post Office Protocol ("POP") and Internet Message Access Protocol ("IMAP").

In one exemplary embodiment of this invention, the mobile device 116 is a data capable device capable of receiving and sending messages using a client application that uses a data network, including but not limited to the internet protocol ("IP"). The mobile device can use any IP transport, including but not limited to 801.11, 801.11a, 801.11b, 801.11g and Wifi.

In one exemplary embodiment of the invention, the mobile device 116 is a data capable device capable of receiving and sending messages using an instant messaging protocol. Examples of instant messaging service provide include, but is not limited to, AOL Instant Messenger™, Yahoo!® Messenger, MSN® Messenger, Jabber® and other similar protocols.

Turning to FIG. 2 there is shown a block diagram of an embodiment of the invention further comprising components to deliver coupons, offers and promotions to the user. The message application server 106 is further connected to an offer application 122. The offer application 122 is connected to an offer database 124.

The offer application 122 is responsible for selecting and creating coupons, offers and promotions for said user 100. The coupon, offer or promotion is part of the message that will be sent to the user device 116 as described above.

In one embodiment, the coupons, offers and promotions are implemented using an offer message. In a preferred

US 7,792,518 B2

11

embodiment, the coupons, offers and promotions are implemented using an offer code and an offer message. In one exemplary embodiment, the coupon and promotion offers are represented by numerical codes. In one exemplary embodiment, the coupons and promotion offers are represented by alphanumeric codes. In one embodiment, the coupons, offers and promotions are implemented using data, including but not limited to text data, XML data and binary data, which is interpreted by an application running on said user mobile device 116. In one exemplary embodiment, the coupons and promotion offers are represented by graphical images—including bar codes.

In one exemplary embodiment each user receives the same coupon, offer or promotion code. In another exemplary embodiment, each coupon, offer or promotion code is unique and encodes the coupon, offer or promotion and a user identification. In one exemplary embodiment, the user identification is a sequence number, a short 3-5 digit sequence, allowing the encoding of 1000-100,000 unique users. Each time a user triggers the system and a message, coupon, offer or promotion is generated, a new sequence number is generated and stored in the offer database with the generated offer. At redemption time, the sequence number is extracted from the offer code and the most recent offer with the same offer and sequence number is matched. The benefit of this exemplary embodiment is to keep the unique identifier short in the common case that the code is manually entered at redemption time. In most retail environments, the speed of customer checkout is critical and the more digits need to be entered, the longer it takes to capture the message, coupon, offer or promotion code and the more likely an input error will be made.

In one preferred embodiment, the message, coupon, offer or promotion code includes a checksum digit, using any of the well known checksum algorithms, including but not limited to the mod 10 algorithm used in credit card numbers, whereby invalid coupon, offer or promotion codes due to input errors can be determined.

These various embodiments of coupons and promotion offers are illustrative only and not limiting, therefore numerous other embodiments of coupons, offers and promotions on mobile devices fall within the scope of this invention.

The offer database 124 is used by the offer application 122 to store available offers, to maintain user profile information concerning coupons, offers and promotions, to maintain logs of created offers. The usage of database to implement sophisticated server applications is well known to those of skill in the art and many possible usage of the database is possible and within the scope of this invention.

In one preferred embodiment, the offer application 122 is connected to an external system 125 comprising enterprise systems, customer relationship management ("CRM") systems or loyalty systems that are involved in the generation, redemption and analysis of the offers.

Internal details of the offer application and the coupon, offer and promotion codes is not discussed in further details as they are known to those skilled in the art. Couponing and all the issues around generating coupons, matching coupons to users based on multiple parameters including past interaction and demographic data is a well established industry. All these couponing techniques apply to the coupon generation and fall into the scope of this invention.

Turning to FIG. 3 there is shown a block diagram of an embodiment of the invention further comprising components to track the redemption of coupons, offers or promotions. The system further comprises above FIG. 2, an offer entry system 130 used to validate and capture coupons, offers, and promotions redemption. The offer entry device 130 is connected to

12

the offer application 122 by means of a data network 132. Optionally, an external system 121 or 125 interfaces with either the message application server, the offer application or both.

In one embodiment, the offer entry system validates the coupon, offer or promotion code. In one embodiment, the offer entry system captures the coupon, offer or promotion redemption for storage in the offer database 124. In one preferred embodiment, the offer entry system validates and captures the coupon, offer or promotion code for storage in the offer database 124.

In one preferred embodiment, the offer entry system 130 is a computing device located where the coupon, offer or promotion is redeemed. The coupon, offer or promotion code is entered at redemption time. In this preferred embodiment the coupon, offer or promotion code is validated in real-time by checking the code on the offer entry system 130 (for example the offer code can contain a checksum that is verified), then by sending a request by means of data network 132 to the offer application 122, that verifies the coupon, offer or promotion code. In this exemplary embodiment, redemption data can be analyzed by the offer server 122 and reports 134 created.

In one preferred embodiment, the offer entry system is a point of sale ("POS") terminal programmed to implement the logic described above. If the coupon, offer or promotion code is validated in real-time preventing fraud and providing for duplicate checking, it is possible to offer valuable coupons, offers and promotions that otherwise might not be economical to provide without such checks.

In an exemplary embodiment, the offer entry system 130 is a stand-alone computing device, for example a kiosk. The user enters the coupon, offer or promotion code in the offer entry system 130, and the offer entry system prints out a paper coupon. The user can then redeem the paper coupon like regular paper coupons. In an exemplary embodiment, the offer entry system 130 locally stores each redemption, and the data can be uploaded on a regular basis, by means of a data network 132 to the offer application 122. In an exemplary embodiment the offer entry device 130 is equipped with removable storage. On a regular basis the removable storage is replaced and the content is read on a compatible device and the data uploaded to the offer application 122.

In one exemplary embodiment, the coupon, offer or promotion code has the same format as a payment number like a credit card number. The existing payment processing infrastructure is used to authorize and capture coupon redemption. The operator of the system described in this invention would request a unique bank id prefix to distinguish its offer numbers from credit or payment card numbers. In one exemplary embodiment, said payment processing infrastructure is configured to track coupon, offer and promotion redemption and credit the user for his coupon, offer and promotion.

The data network 132 is any data network or any means using any messaging protocol or data representation not necessarily always connected allowing for the transfer of data, in real-time or in batch mode, from the offer entry device 130 to the offer application 122. In one preferred embodiment, the network is based on the Internet Protocol.

Turning to FIG. 4 there is shown a block diagram of an embodiment of the invention illustrating how follow-on messages can be sent at later dates to said user 100. Messages, coupons, offers and promotions are delivered immediately upon the user activating the trigger system 102. But the organization, can also decide to send further messages, coupons, offers and promotions to users that have participated previously. Under this scenario, during the initial communication, the message application server 106, or the offer server 122

US 7,792,518 B2

13

stores the mobile device 116 address. At a later date, when the organization wants to push out new messages, coupons, offers or promotions, the list of users that have participated is looked up. If the message includes a coupon, offer or promotion, it may be looked up by the offer application 122 using a mechanism similar to the one described above. The push message is then delivered to the user using the same system and method described earlier.

FIG. 5 illustrates the basic steps of the invention. In a typical usage of the invention, the user 100 is encouraged to trigger the system by a "call to action" message presented in a traditional media format. The trigger system 102, upon being triggered (step 200) is designed to capture (step 202) the unique identifier capable of identifying the user mobile device 116, and optionally other data. The captured data is then forwarded (step 204) to the message application server 106. The message application server 106 then retrieves (step 206) the mobile device address of the user based on the unique identifier. The message application server 106 then executes (step 208) a programmed set of instructions whereby an appropriate response message is generated. Optionally, in step 210, all the forwarded data, and any additional data generated by the execution of the instructions in step 208 are saved in the message application database 120. The response message is then forwarded to the mobile service provider gateway 112 in step 212, for delivery to the mobile device 116 by the mobile service provider. Said user can then read said response message on said mobile device 116 in step 214.

In an alternative embodiment, step 206 is not performed in the message application server 106, but instead in the trigger system 102, and either the mobile address or both the mobile address and the unique identifier are forwarded to the message application server in step 204.

FIG. 6 illustrates the basic steps of the invention described in FIG. 5 augmented by the delivery of a coupon, offer or promotion. The trigger steps 200, 202, 204 and 206 are the same as in FIG. 5. Instead of directly generating the response message in the message application server 106, all the user data available in the message application server including the unique identifier, the mobile device address, the optional user data is forwarded to the offer application 122 (step 220). Based on all the available data, the offer server 122 generates an offer (step 222). The generated offer and any other user data is stored in the offer database 124 (step 224). The response message containing the coupon, offer or promotion is forwarded back to the message application server 106 for delivery to the mobile device 116 (step 226). The message delivery steps 218, 212 and 214 are the same as in FIG. 5. Later on the user will redeem the coupon, offer or promotion message, for example in a store. The coupon, offer or promotion being redeemed is entered (step 228) in the offer entry system 130. Either in real-time or in batch the redemption data is forwarded to the offer application 122 (step 230). The redemption data is then stored in (step 232) in the offer database 124. Based on the data stored in step 224 and step 232 in the offer database 124, reports 134 can be generated that show redemption rates from which the effectiveness of the promotion can be measured.

FIG. 7 illustrates another preferred embodiment, where the coupon, offer or promotion is verified after step 228, by interrogating the offer application 122. Started from step 214 of FIG. 6, the offer is entered in the offer entry system 130 in step 228. The offer is then forwarded to the offer application 122 for verification by means of data network 132 (step 240). The offer is verified by the offer application 122 (that is the offer application verifies it's a valid offer, and has not been already redeemed if duplicate checking is configured) (step

14

242). If the offer is valid, then the redemption proceeds (246) and the following steps are the same as in FIG. 6. If the offer is invalid, the status is made available to the offer entry device 130 (step 244). In the case of an invalid offer, the offer may be re-entered since the offer may have been rejected due to an input error. If the offer has already been redeemed, there is no benefit in re-entering the offer.

FIG. 8 illustrates step 202 in an exemplary embodiment where the trigger system 102 is implemented using an IVR system. The user calls the IVR number. The PSTN delivers the call to the IVR system in Step 300. The IVR system is then programmed to retrieve the user calling number, using the PSTN caller id support (step 302). If the user calling number is available, the system spells out the number to the user and asks for a confirmation in step 306. If the user confirms positively, the user calling number is then forwarded to the message application server 106 as described in step 204. If the user confirms negatively (step 306), or the IVR system does not detect the user calling number in step 302 (for example if the user is blocking caller id), then the IVR is programmed (step 304) to ask the user to enter his cell phone number. The phone number can either be entered using the telephone key pad, and the IVR system will detect the Dual Tone Multiple Frequency ("DTMF") tones, or alternatively using a voice recognition system. The details on how to program an IVR system to perform the steps described above are well known to those skilled in the art.

FIG. 9 is an alternative embodiment of step 202 that builds upon FIG. 7. In FIG. 8 the initial steps 300, and 302 are the same as in FIG. 8. The calling number supplied by the PSTN, or entered by the user is analyzed in step 320 to see if it corresponds to a cell phone number. There are multiple ways to perform this operation which are known to those skilled in the art. One possible implementation is to lookup the first six digits of the phone number in a database called the Local Exchange Routing Guide ("LERG") that contains information on all the PSTN switches. If the phone number corresponds to a cell phone number, the IVR is programmed to proceed to step 306. If the number does not correspond to a cell phone number, then the IVR is programmed in step 304 to prompt for a cell phone number as described before. In this alternative embodiment, step 322 was also added prompting the user for additional data, for example for a choice of an offer of interest or from a store of interest. Once all the additional data is captured, the user cell phone and the additional data is forwarded to the message application server 106 as described in step 204.

Having now described one or more exemplary embodiments of the invention, it should be apparent to those skilled in the art that the foregoing is illustrative only and not limiting, having been presented by way of example only. All the features disclosed in this specification (including any accompanying claims, abstract, and drawings) may be replaced by alternative features serving the same purpose, and equivalents or similar purpose, unless expressly stated otherwise. Therefore, numerous other embodiments of the modifications thereof are contemplated as falling within the scope of the present invention as defined by the appended claims and equivalents thereto.

For example, the techniques may be implemented in hardware or software, or a combination of the two. In one embodiment, the techniques are implemented in computer programs executing on programmable computers that each include a processor, a storage medium readable by the processor (including volatile and non-volatile memory and/or storage elements), at least one input device and one or more output devices. Program code is applied to data entered using the

US 7,792,518 B2

15

input device to perform the functions described and to generate output information. The output information is applied to one or more output devices.

Each program may be implemented in a high level procedural or object oriented programming language to communicate with a computer system, however, the programs can be implemented in assembly or machine language, if desired. In any case, the language may be a compiled or interpreted language.

Each such computer program may be stored on a storage medium or device (e.g., CD-ROM, hard disk or magnetic diskette) that is readable by a general or special purpose programmable computer for configuring and operating the computer when the storage medium or device is read by the computer to perform the procedures described in this document. The system may also be considered to be implemented as a computer-readable storage medium, configured with a computer program, where the storage medium so configured causes a computer to operate in a specific and predefined manner.

In a most preferred embodiment, the various components, such as the trigger system, the message application server, the offer application, etc., are implemented on one or more computer systems. The multiplicity of the computer system allow for the distribution of the workload in accordance with, e.g., the number of computer systems available and enables the system to function even is a subset of the computer systems experience one or more faults. The computers should be connectable to each other, for example, by means of 100 Base-T Ethernet interfaces and corresponding 100Base-T Ethernet switches. In the most preferred implementation, each computer contains dual UltraSPARC® III processors, 1024 MB RAM, two 9 GB disk drives, and operates using the Unix™ compatible Solaris™ operating system. As will be appreciated, the specific hardware utilized can be varied in accordance with need, required capacity, and the preferred programming and operating environment, as well as in response to other factors.

What is claimed is:

1. A system, comprising:
 - a trigger system configured to receive, via a trigger device, a unique identification identifier (ID) from a user of a mobile device, the unique ID being associated with the user and the mobile device, and to transmit the unique ID to an application server, wherein the unique ID is at least one of: a number, data encoded on a magnetic stripe of a card, a bar code, a Radio Frequency Identification (RFID) tag including data, a client application including unique data, and a biometric identifier unique across a plurality of users; and
 - an offer application system coupled with the application server to generate an offer based in part on the mobile device identification number, and provide the offer to the application server for indication in the message sent to the mobile device;
 - and an offer entry system coupled with the offer application system to receive and validate the offer when the offer is redeemed by a user;
 - wherein the application server is configured to retrieve a mobile device identification number associated with the unique ID, the mobile device identification number identifying the mobile device, and to cause a message to be sent to the user via the mobile device.
2. The system of claim 1, wherein the trigger device is distinct from the mobile device.
3. The system of claim 2, wherein the trigger device is one of a computing device equipped with a magnetic card reader,

16

a radio frequency identification reader, a biometric identification device, a kiosk, an interactive voice response system, or a wireless card attached to a computing device.

4. The system of claim 1, wherein the mobile device encompasses the trigger device, and wherein the unique ID is received from the mobile device in a first transmission and the message is pushed from the application server to the mobile device in a second transmission, wherein the first and second transmissions occur during separate transmission sessions.

5. The system of claim 1, wherein the offer is represented by one of a numeric code, alphanumeric code, barcode, or image.

6. The system of claim 1, wherein the offer further includes a user identification number generated by the application system to enable the offer entry system to validate the offer when redeemed by a user.

7. The system of claim 1, wherein the application server is coupled with a service provider gateway to send messages to users of each of a plurality of mobile service provider systems.

8. A method, comprising:

receiving, via a trigger device, a unique identifier (ID) from a user of a mobile device, the unique identifier being associated with the user and the mobile device, wherein the unique ID is at least one of:

a number, data encoded on a magnetic stripe of a card, a bar code, a Radio Frequency Identification (RFID) tag including data, a client application including unique data, and a biometric identifier unique across the plurality of users;

determining a mobile device identification number associated with the unique identifier, the mobile identification number identifying the mobile device;

generating a response message;

forwarding the response message to a messaging gateway for delivery to the user via the mobile device identified by the mobile device identification number;

determining user data associated with a user of the mobile device in response to receiving the unique identifier;

generating an offer for inclusion in the response message based at least in part on the user data and the mobile device identification number, wherein the offer includes an offer code;

receiving the offer code when a user attempts to redeem the offer; extracting a validation code from the offer code; and

utilizing the extracted validation code to validate the offer and allow redemption of the offer.

9. The method of claim 8, wherein the trigger device is a device other than the mobile device.

10. The method of claim 8, further comprising: receiving the unique identifier from the mobile device;

and

pushing the message to the mobile device.

11. The method of claim 8, wherein said validation code contains one or more checksum digits to enable detection of offer code input errors.

12. A system, comprising:

an external source providing a unique identifier (ID) associated with a user of a mobile device, the unique ID being associated with the user and the mobile device, wherein the unique identifier (ID) is at least one of: a number, data encoded on a magnetic stripe of a card, a bar code, a Radio Frequency Identification (RFID) tag

US 7,792,518 B2

17

including data, a client application including unique data, and a biometric identifier unique across a plurality of users;
a trigger system to receive the unique ID from the external source and transmit the unique ID to an application server; and
the application server to retrieve a mobile device identification number associated with the unique ID, the mobile device identification number identifying the mobile device, and to cause a message to be sent to the user via the mobile device identified by the mobile device identification number.

18

An offer application system coupled with the application server to generate an offer based in part on the mobile device identification number, and provide the offer to the application server for indication in the message sent to the mobile device;

And an offer entry system coupled with the offer application system to receive and validate the offer when the offer is redeemed by a user.

13. The system of claim 12, wherein the external source includes biometrics, a smart card, a magnetic card, or a radio frequency identification tag.

* * * * *

EXHIBIT C



US008131262B2

(12) **United States Patent**
Trioano et al.

(10) **Patent No.:** **US 8,131,262 B2**
(45) Date of Patent: **Mar. 6, 2012**

(54) **SYSTEM AND METHOD TO INITIATE A MOBILE DATA COMMUNICATION UTILIZING A TRIGGER SYSTEM**

(75) **Inventors:** Michael Trioano, Waltham, MA (US); Mark Grindeland, Framington, MA (US); Gerald Hewes, Lexington, MA (US); Eswar Priyadarshan, West Roxbury, MA (US); Randall Snyder, Campbell, CA (US)

(73) **Assignee:** M-Qube, Inc., Watertown, MA (US)

(*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) **Appl. No.:** 12/846,691

(22) **Filed:** Jul. 29, 2010

(65) **Prior Publication Data**
 US 2011/0086617 A1 Apr. 14, 2011

Related U.S. Application Data

(63) Continuation of application No. 12/177,093, filed on Jul. 21, 2008, now Pat. No. 7,792,518, which is a continuation of application No. 10/521,521, filed as application No. PCT/US03/22661 on Jul. 18, 2003, now Pat. No. 7,403,788.

(60) Provisional application No. 60/397,435, filed on Jul. 19, 2002.

(51) **Int. Cl.**
H04M 12/58 (2006.01)

(52) **U.S. Cl.** 455/412; 455/466; 455/414.1; 455/432.2

(58) **Field of Classification Search** 455/412.1, 455/414.1, 466, 432.3, 41.2

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,668,876 A	9/1997	Falk et al.	
5,764,742 A	6/1998	Howard et al.	
6,560,651 B2	5/2003	Katz et al.	
6,609,150 B2 *	8/2003	Lee et al.	709/219
6,647,257 B2	11/2003	Owensby	
6,925,307 B1	8/2005	Mamdani et al.	
7,139,565 B2	11/2006	Fiatel et al.	
7,231,357 B1	6/2007	Shanman et al.	
7,343,317 B2	3/2008	Jokinen et al.	
2001/0039514 A1	11/2001	Barenbaum et al.	
2002/0004746 A1	1/2002	Ferber et al.	
2002/0049644 A1	4/2002	Kargman	

(Continued)

FOREIGN PATENT DOCUMENTS

KR 2001/076121 8/2001

(Continued)

OTHER PUBLICATIONS

PCT International Search Report, PCT/US03/22661, 4 pages.

(Continued)

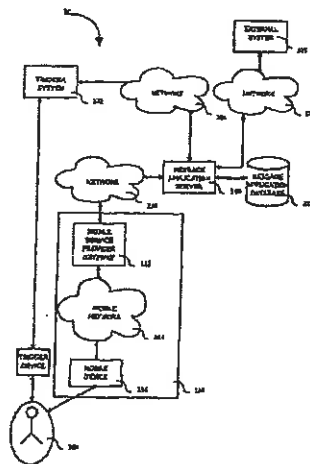
Primary Examiner — David Q Nguyen

(74) *Attorney, Agent, or Firm* — Arent Fox LLP

(57) **ABSTRACT**

A system and method to enable a user to initiate a communication with an organization using a mobile communication device by means of a trigger system. A system and method to enable an organization to acquire a user mobile device address by means of a trigger system. A system and method to enable an organization to respond to a user by means of a trigger system and a message application server. A system and method to enable organizations to deliver mobile messages, coupons, offers and promotions to users mobile device by means of a combination of a trigger system, a message application server and an offer application.

20 Claims, 10 Drawing Sheets



US 8,131,262 B2

Page 2

U.S. PATENT DOCUMENTS

2002/0085027 A1 7/2002 Kim
 2002/0160776 A1 10/2002 Torabi
 2003/0005066 A1 1/2003 Lazaridis et al.
 2003/0019935 A1 1/2003 Giannulli
 2003/0074328 A1 4/2003 Schiff et al. 705/75
 2003/0100315 A1 5/2003 Rankin
 2003/0108163 A1 6/2003 Brown et al.
 2003/0174814 A1 9/2003 Diacakis
 2003/0187938 A1 10/2003 Mousseau et al.

FOREIGN PATENT DOCUMENTS

WO WO 01/61559 A1 8/2001
 WO WO 01/97037 A1 12/2001
 WO WO 02/103486 A2 12/2002

OTHER PUBLICATIONS

U.S. Appl. No. 60/397,435, filed Jul. 19, 2002, 21 pages.

* cited by examiner

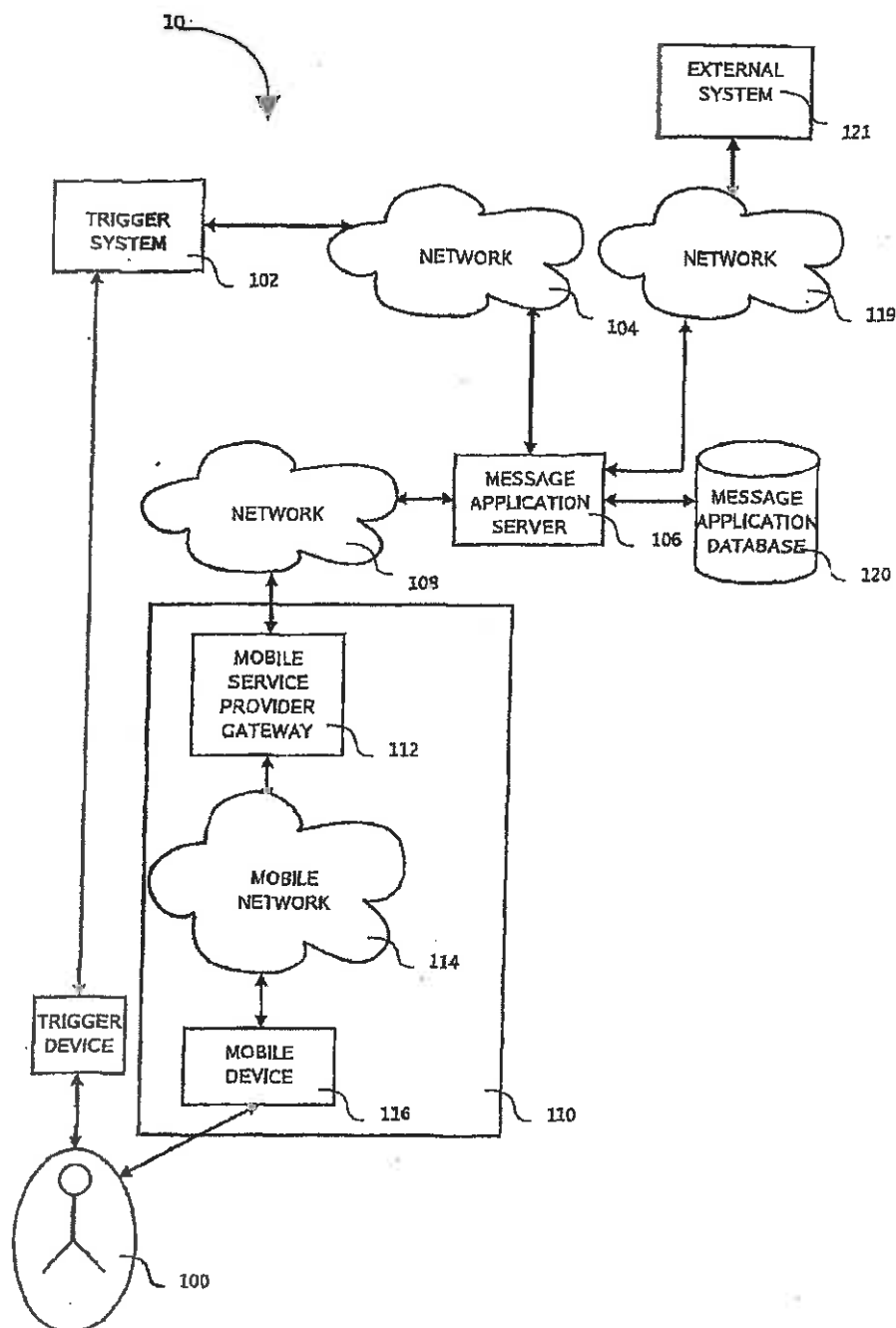


FIG. 1

U.S. Patent

Mar. 6, 2012

Sheet 2 of 10

US 8,131,262 B2

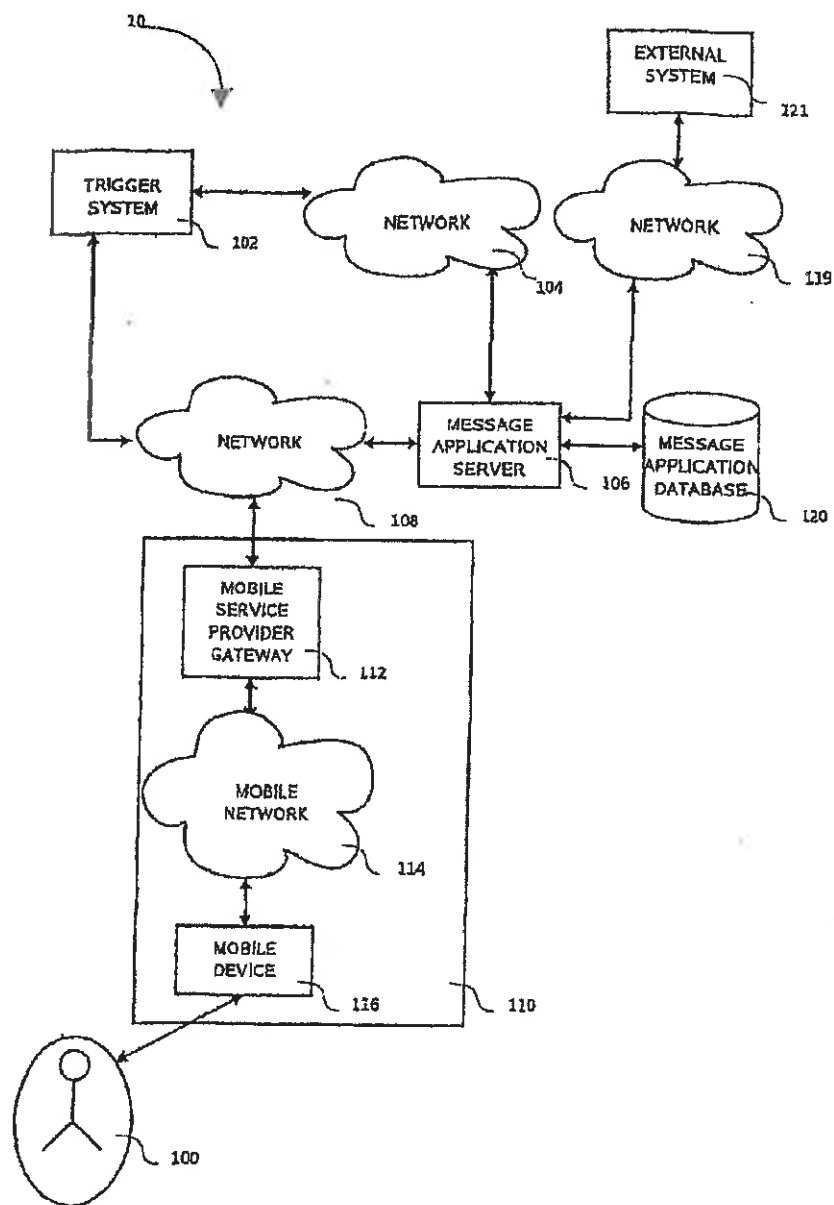


FIG. 1A

U.S. Patent

Mar. 6, 2012

Sheet 3 of 10

US 8,131,262 B2

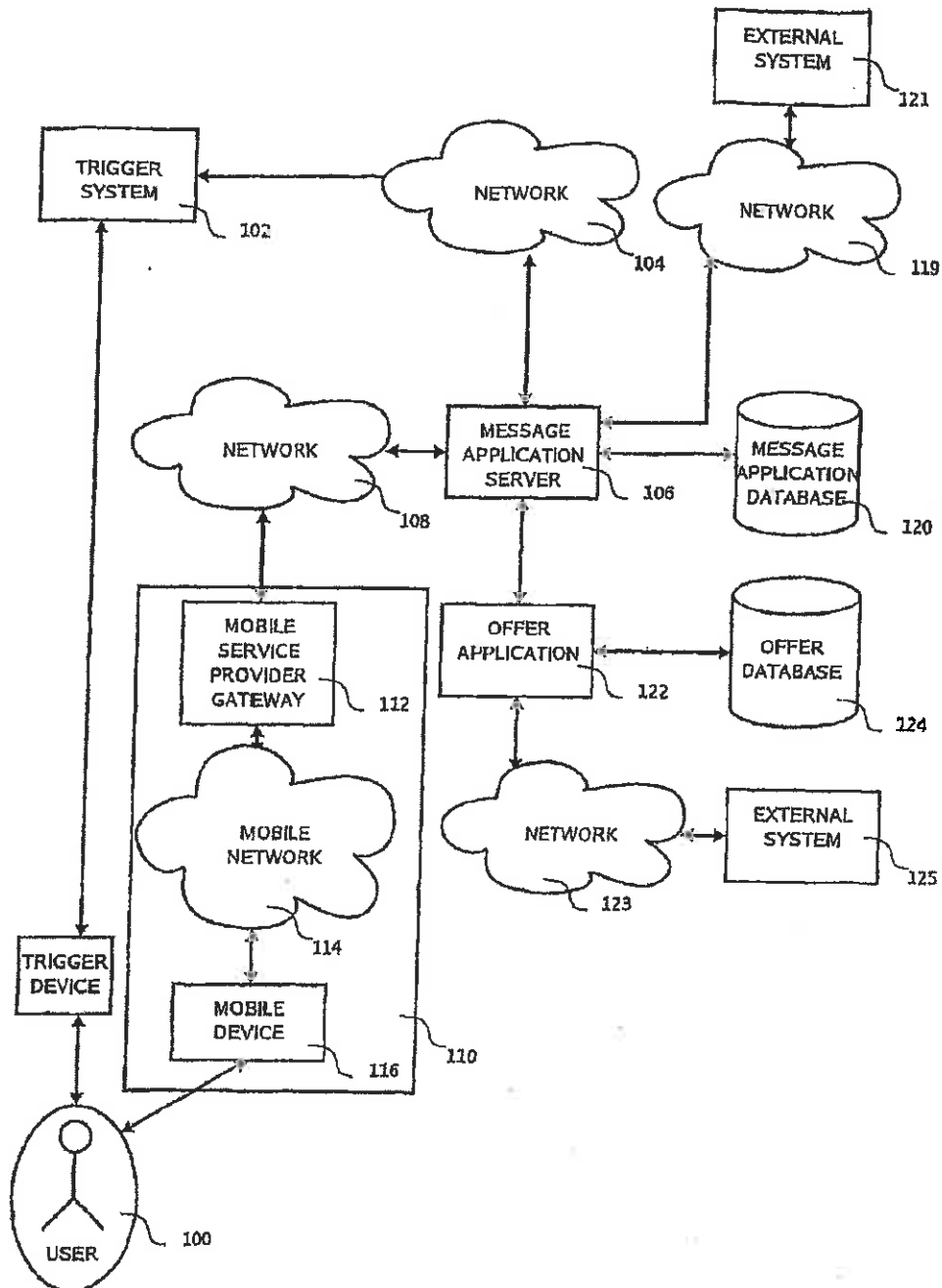


FIG. 2

U.S. Patent

Mar. 6, 2012

Sheet 4 of 10

US 8,131,262 B2

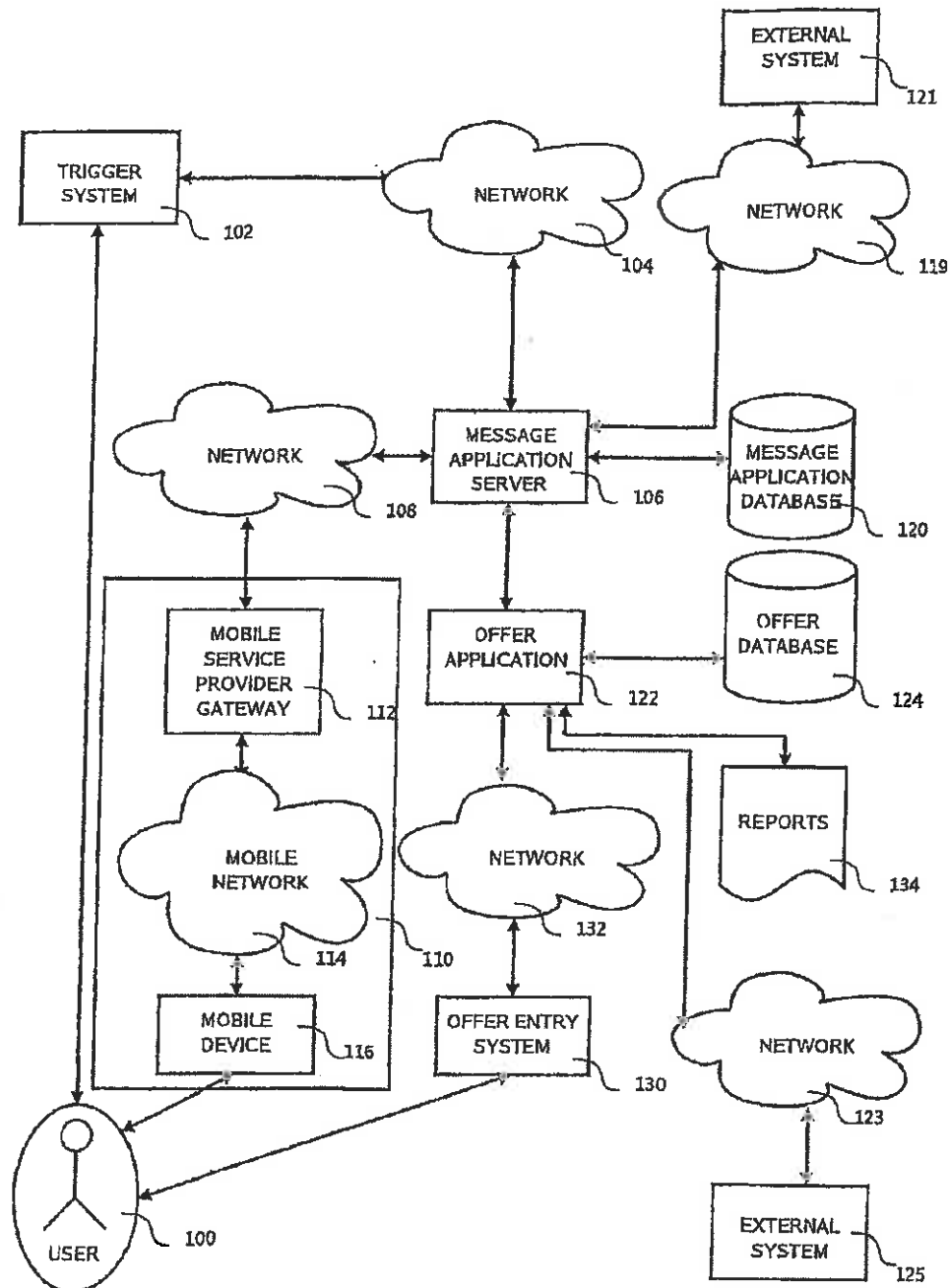


FIG. 3

U.S. Patent

Mar. 6, 2012

Sheet 5 of 10

US 8,131,262 B2

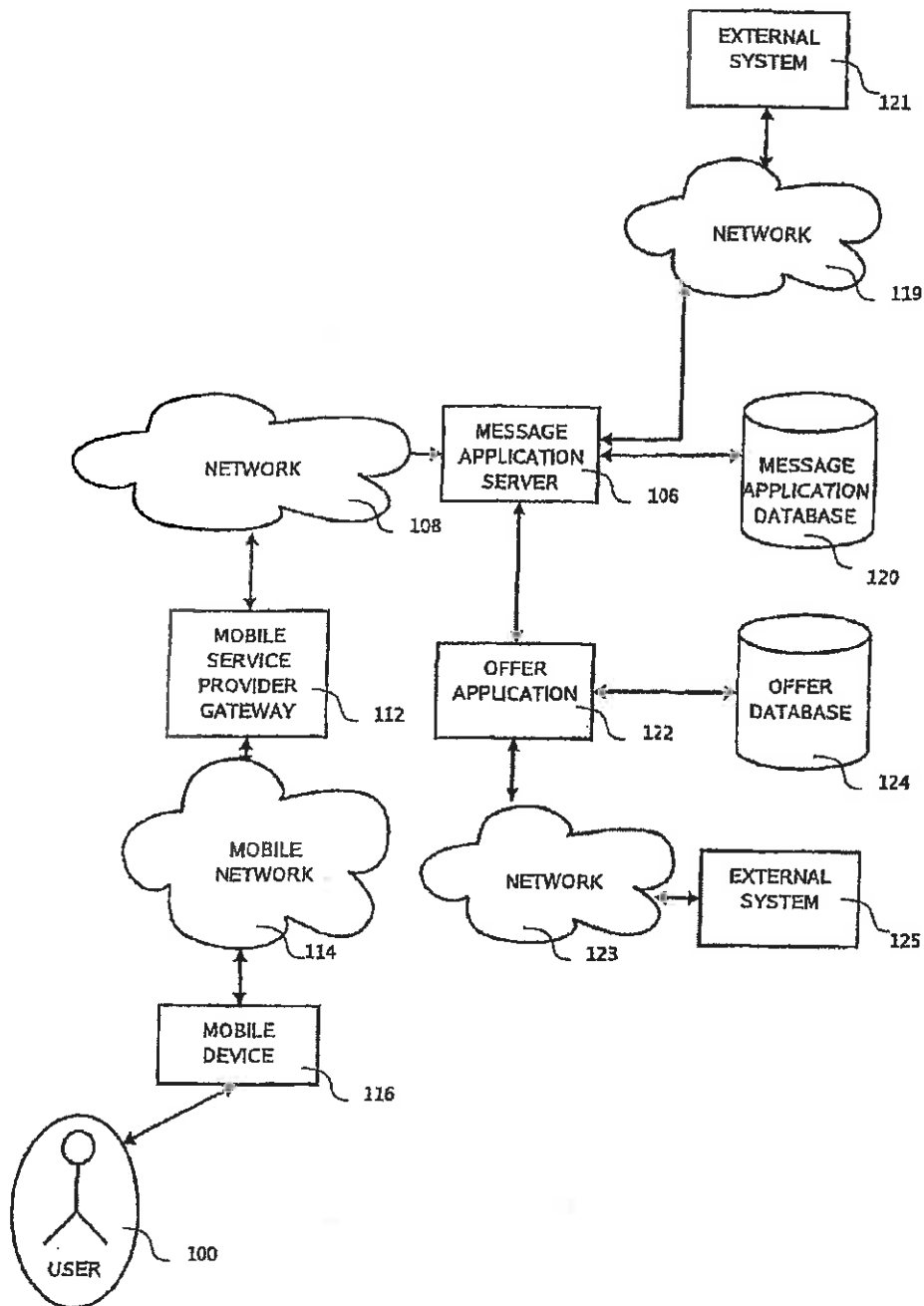


FIG. 4

U.S. Patent

Mar. 6, 2012

Sheet 6 of 10

US 8,131,262 B2

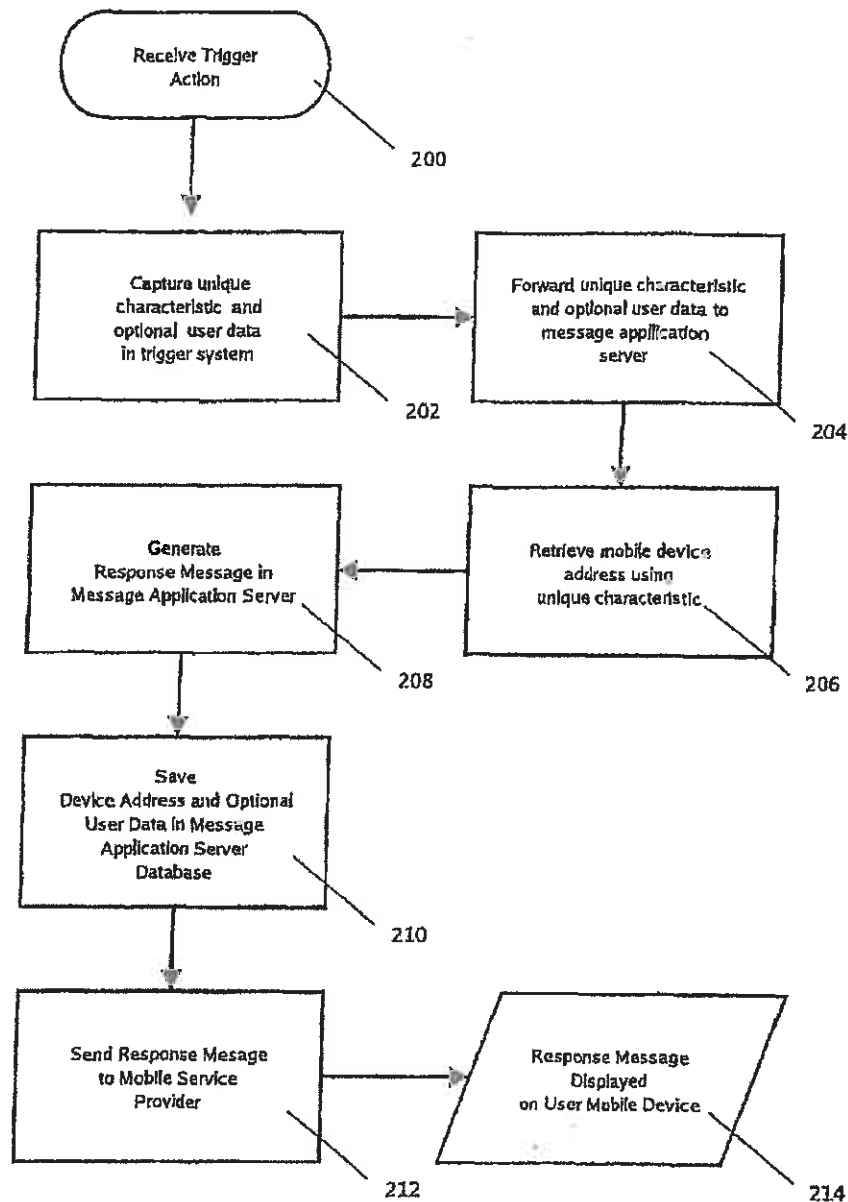


FIG. 5

U.S. Patent

Mar. 6, 2012

Sheet 7 of 10

US 8,131,262 B2

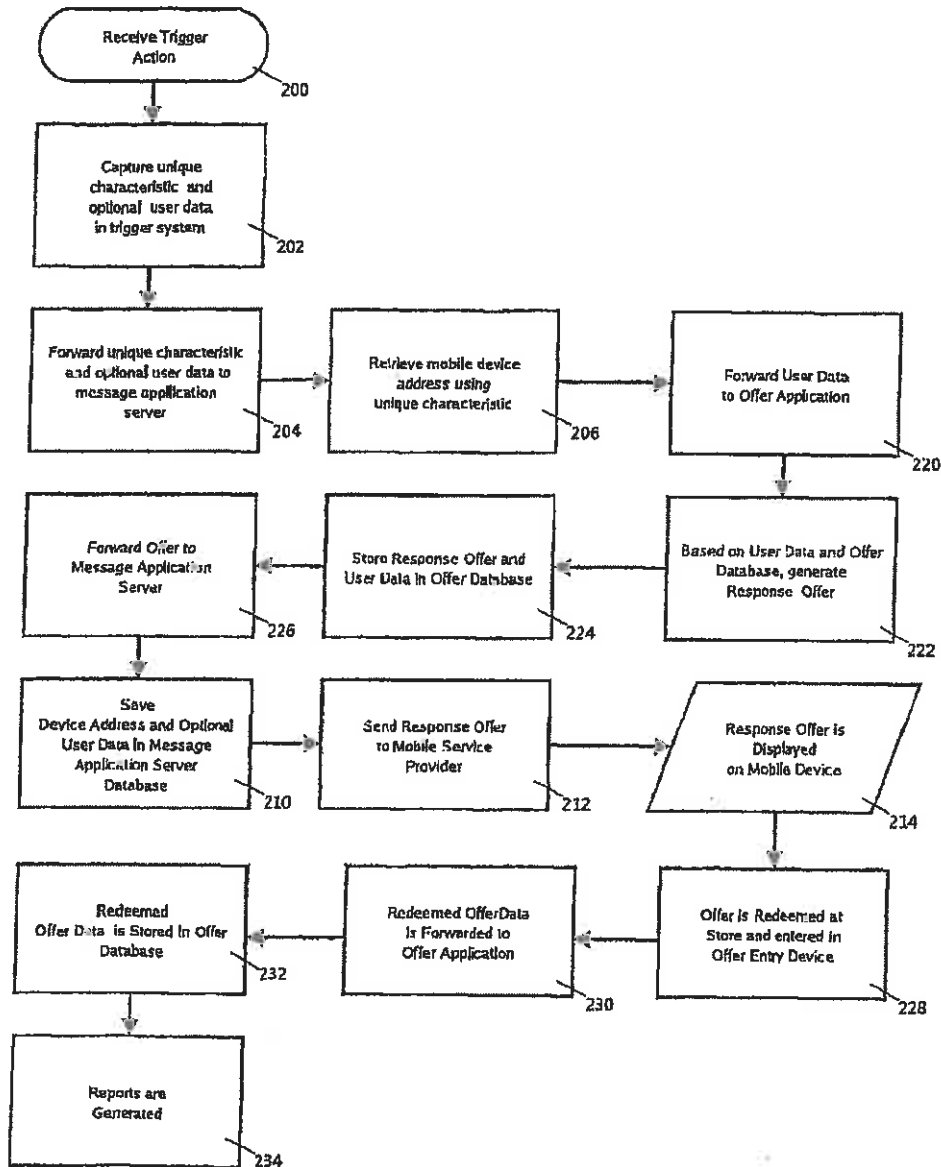


FIG. 6

U.S. Patent

Mar. 6, 2012

Sheet 8 of 10

US 8,131,262 B2

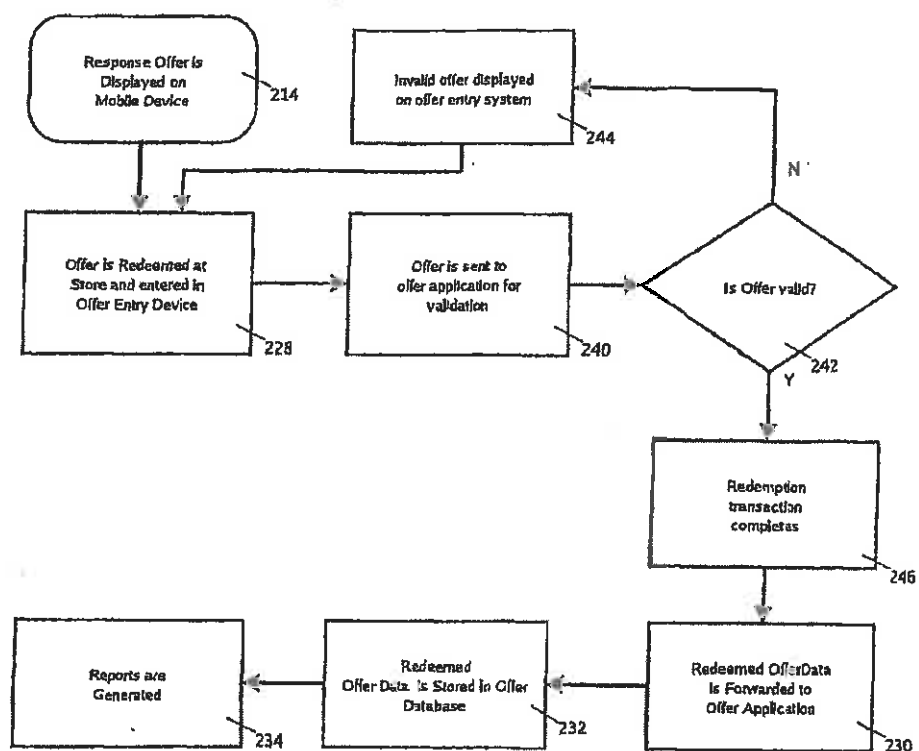


FIG. 7

U.S. Patent

Mar. 6, 2012

Sheet 9 of 10

US 8,131,262 B2

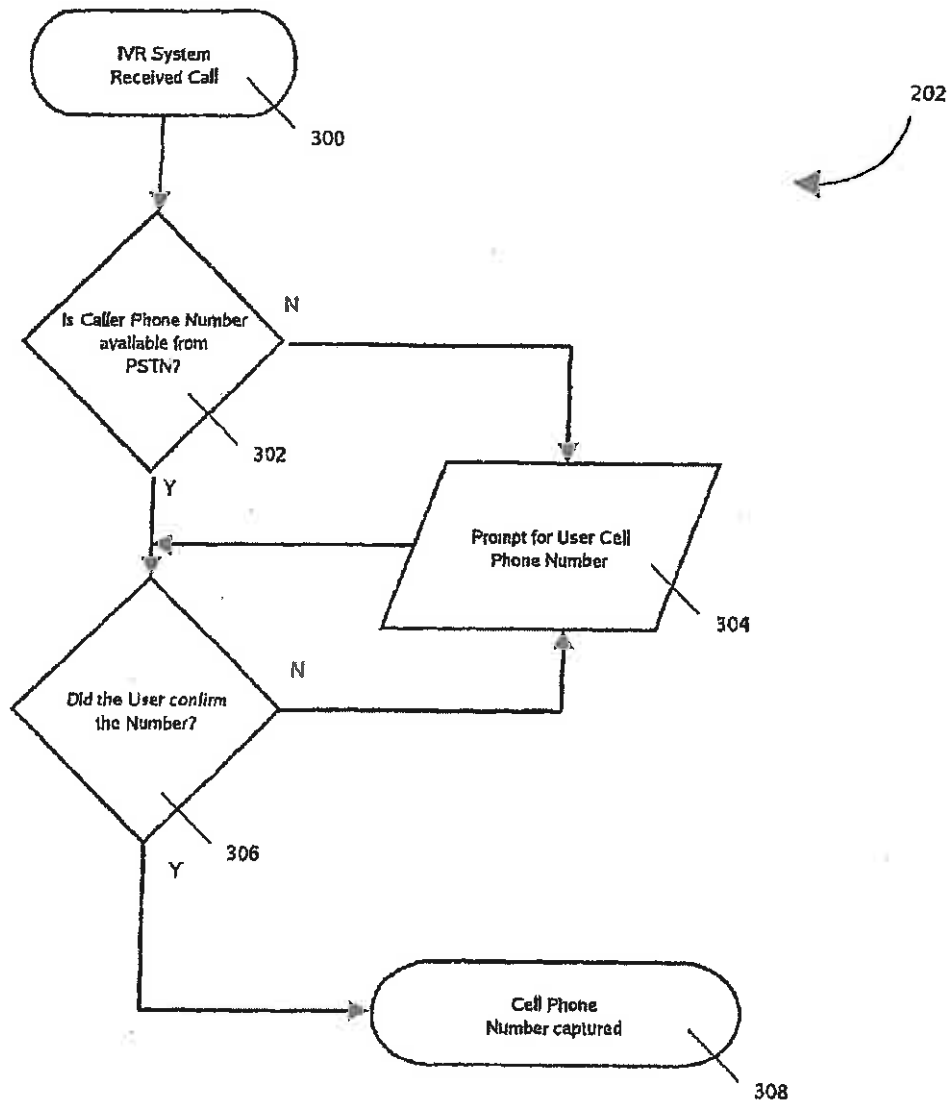


FIG. 8

U.S. Patent

Mar. 6, 2012

Sheet 10 of 10

US 8,131,262 B2

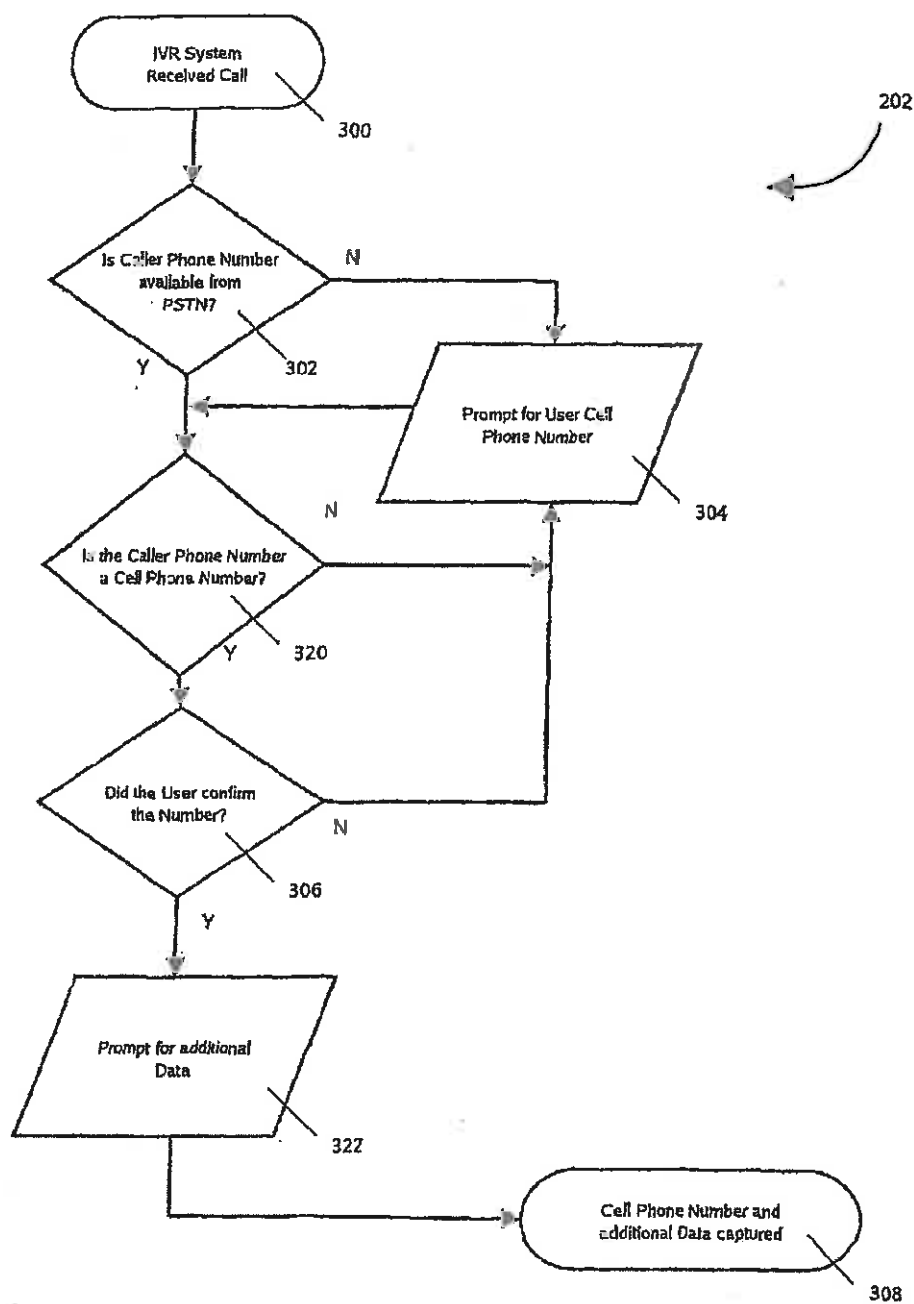


FIG. 9

US 8,131,262 B2

1

SYSTEM AND METHOD TO INITIATE A MOBILE DATA COMMUNICATION UTILIZING A TRIGGER SYSTEM

PRIORITY CLAIM

This application is a continuation of U.S. application Ser. No. 12/177,093, filed Jul. 21, 2008, which is a continuation of U.S. application Ser. No. 10/521,521 filed Jan. 18, 2005 now U.S. Pat. No. 7,403,788, which is a National Phase of International Application No. PCT/US03/22661 filed on Jul. 18, 2003, which claims priority to U.S. Provisional Application 60/397,435 filed Jul 19, 2002. The disclosures of the prior applications are hereby incorporated by reference in their entirety.

FIELD OF THE INVENTION

This invention relates to enabling communications between users and organizations by means of data enabled mobile communication devices. More particularly this invention relates to a system, method and machine to enable organizations to execute direct marketing techniques and promotions via mobile communication devices.

BACKGROUND OF THE INVENTION

Global brands spend hundreds of billion of dollars annually in the United States on brand marketing and communications. Over the last decade, an increasing percentage of brand marketing budgets have been spent in direct marketing channels (e.g., direct mail, telemarketing, email, etc.). In fact, total brand spending on direct mail now exceeds that of broadcast television. Given direct marketing's unique capabilities, such as precise targeting, the ability to drive specific behaviors, and highly measurable results, marketers are expected to continue spending heavily in direct channels.

One of the most significant new direct marketing opportunities is the emergence of the wireless channel. The wireless channel provides marketers the unmatched ability to reach the individual (not just the household), in a time and event-sensitive way, with attractive and measurable marketing return on investment ("ROI"). In Europe, hundreds of brands are beginning to utilize the wireless data channels and are committing a sizeable portion of their communications budgets over the next year to wireless.

An organization wanting to use data messaging for communication with its user base needs to make it easy for them to participate. The organization needs to have a means to obtain a user's mobile device address to be able to communicate with him using his mobile device data capabilities. The organization needs to obtain the user permission to be able in the future to send new messages, coupons, offers or promotions, to the user's mobile devices.

There are multiple ways to for a user to initiate a communication with an organization and for an organization to obtain a user's mobile device address, but in this invention we are primarily focused on methods to initiate a communication when said user is in a mobile setting, such as a public environment as opposed to a home or office environment. In a mobile setting, there needs to be an easy and quick way for said user to specify his interest in starting a communication and for the organization to obtain said user's mobile device address whereby the communication can occur.

Once the communication is initiated, a message oriented application can capture the user's mobile device address in a database, and respond back with a message, a coupon, an offer or a promotion.

2

It is important that said user only receive future organization originated ("push") communications only if he has elected to do so. A system and method to perform communication between users and organizations needs to support an easy way to either opt-in or opt-out from receiving future communications.

An example of a situation where a user may be interested in initiating a communication with an organization is the case of the organization being a brand sponsoring some event; for example a contest, building brand and product awareness where the user may win some prizes. Other examples include receiving offers, coupons, promotions or discounts on their mobile device.

The communication, its goals, its benefits and how a user can initiate it is typically displayed using a traditional channel such as print media, product packaging, bar coaster, billboard, sign, posters, TV or radio advertisements, candy wraps, etc. . . . This process is called the "call to action" message. It is easy to see that if participating is easy to accomplish, such communications can have a wide impact for both users and organizations.

One very common application of this invention is to deliver coupons, offers and promotions to users that have requested them. There is a cost for an organization to provide, promote and deploy systems to execute such mobile coupon, offer and promotion programs. Hence it is an important requirement that a system be able to measure redemption rates to compute the effectiveness of the program. In addition, much better coupons, offers and promotions can be given to individual users if their past individual receptiveness is known—which makes uniquely identifying the coupon, offer and promotion important.

There is much economical value in being able to deploy a system where users can receive messages, coupons, offers and promotions at the time of their choosing as well as occasionally receiving push specials thereby allowing the organization running the program to develop a comprehensive loyalty program bringing value to both the user and the organization. To support such a program, a system needs to exist to enable users to enroll, participate and receive occasional "push" messages, coupons, offers and promotions that leverages the capabilities of mobile data communication devices and Customer Relationship Management and Loyalty systems.

In addition, some of the offers, coupons and promotions can be valuable enough that the organization giving them out wants to make sure they are used only once. Examples of such compelling offers are very deep discount to join the offer program—think about book clubs that sell you your first three books for \$1 to join the club. In this case, the offer needs to be verified that it has not already been redeemed. Such a step is critical with the technologies described in this invention where it is often easy to forward or forge a message on a mobile device.

The primary limitations with existing methods to initiate a communication between an organization and a user using a mobile device have to do with: the time, effort and lack of convenience of triggering the communication using current systems; the lack of common service addresses for users to initiate the communication with an organization in some common existing messaging technologies; and the lack of familiarity on the part of users on how to initiate a communication using their mobile device.

BACKGROUND OF THE INVENTION—PRIOR ART

Obtaining the user's mobile device address in a mobile setting to allow for communication is not always straightfor-

US 8,131,262 B2

3

ward for some classes of mobile devices, in particular digital cell phones. Almost all digital cell phones sold today have one or more data messaging capabilities. These may include, but is not limited to, Short Message Service ("SMS"), Enhanced Messaging System ("EMS"), Multimedia Messaging Service ("MMS"), Wireless Application Protocol ("WAP") and mobile e-mail. The large number of digital cell phones in the U.S. makes solving the problem of obtaining cell phones data address a critical problem to be solved.

One solution that is used by some wireless carriers to allow a user to initiate a communication using a cell phone with an organization, is to use a Mobile Originated ("MO") message sent to a service access code. In the case of a cell phone, a service access code can either be a short code (a number with less than the regular 10 digits defined by the North American Numbering Plan ("NANP")—for example "2327") or a regular NANP 10 digit number. A user that wants to respond to a "call to action" message sends an MO message to the organization service access code setup by his cell phone carrier.

While the above technique using MO messages works can work in geographies that support standardized service access codes across wireless carriers, it is much less effective in countries that don't. In countries with no standardized service access codes, like the U.S., it is awkward for an organization to publish different service access code addresses for each wireless carrier. In addition the MO technique is not effective in geographies where cell phone users are not familiar on how to send MO messages. The situation is compounded by the fact that some wireless carriers currently do not offer third parties the ability to receive MO messages sent to them.

It is possible to solve the problem of lack of standardized service access codes by using an e-mail address instead of the typical telephone digit numbers used for SMS, EMS and MMS. Using e-mail is possible because most wireless carriers offer the ability for users to send and receive e-mails from their cell phone, either directly using Simple Mail Transfer Protocol ("SMTP") or indirectly via SMS, EMS, MMS, WAP, or hyper text markup language ("HTML") by means of an SMTP gateway provided by the wireless carriers. A service using e-mail as its service address requires that users enter the service e-mail address when composing their initial MO message. Unfortunately, it is often extremely cumbersome for users to enter an e-mail address composed of alphabetical letters and symbols using a cell phone numeric keypad. For example, on a Sony-Ericsson T681 phone it takes 34 key presses (assuming no mistakes) to enter "fun@m-qube.com". Hence user response rates will be extremely low with this approach.

Another alternative that can be used to solve the problem of lack of standardized service access codes is to deploy modem banks of Personal Computer ("PC") based wireless data cards. Said wireless data card is like a miniature cell phone with its own phone number. With the peer-to-peer SMS interoperability available in many countries, any MO message sent to said wireless data card phone number would be delivered to it, and by extension to the message application server connected to said PC. While this approach effectively works around the problem of lack of standardized service access codes, it suffers from severe scalability problems (a card typically cannot handle more than 2-3 messages per second, and most cards are not designed to be operated 24x7x365.)

Another alternative is to use a range of numbers for the service access codes normally allocated to a wireless carrier for use by its subscribers, and reconfigure the carrier data network elements to forward any MO messages sent to said range, not to a physical cell phone, but instead to the organi-

4

zation's message application server using a data network such as the Internet. This solution builds upon SMS interoperability and is scalable. But it requires that the organization have a relationship with the wireless carrier offering said range, that said wireless carrier have the capability to offer this service to organizations, and that other wireless carrier allow this to happen.

An equally critical consideration is the expertise required from users to send an MO message using the native mobile device data messaging interface. In particular, not all cell phone users know how to originate a MO message using their cell phone. Another method is required to allow them to participate before they become more familiar with their cell phone messaging capabilities. Once a cell phone user receives a message, it is much easier to reply to it since most cell phone handsets provide some guidance on how to do so.

Or, the user may be familiar with messaging, but the time involved may be a limiting factor. For example, many users may not be willing because of the inconvenience to text-in a message when entering in a supermarket to receive tailored coupons, but may be more willing to use other methods described in this invention to trigger the offers. This problem is especially acute for mobile messaging technologies that don't rely on number for addresses, but on long strings like e-mail or instant messaging screen names. While presumably it is possible to enter a long string using these mobile devices, this is usually a somewhat slow process. A faster trigger mechanism is required.

Hence existing methods using the native messaging capabilities of a user's mobile device to support mobile originated messages to allow said user to start a communication with an organization service are not effective in many situations or geographies. The limitations of the existing methods makes using the mobile channel as a direct marketing channel not a cost effective channel; as user response rates would be too low to cover the campaign costs.

BACKGROUND OF THE INVENTION—OBJECTS AND ADVANTAGES

The specific object and advantages for this present invention are:

- a) Provides for an alternative to using the mobile device native data communication interface in cases where there are no unique service address (common service access codes), no publicly supported service side infrastructure, or the user is unfamiliar with his device data messaging capabilities.
- b) Provides for faster and easier methods to trigger a communication between an organization and a user than by using the device native mobile originated messaging capabilities.
- c) Some of the embodiments described in the invention, like using an interactive voice response ("IVR") system as the trigger system, make it much easier to collect additional information such as opt-in permission for future communication or offers, or more information, such as offers of interest to the user.
- d) Enables simple, fast, practical and economical means to instantly deliver offers, coupons and promotions to users in public places.

Further objects and advantages of this present invention will become apparent from a consideration of the drawings and ensuing description.

SUMMARY OF THE INVENTION

The present solution solves the aforementioned problem not by means of the user mobile device native data messaging

US 8,131,262 B2

5

services but by means of an external trigger system not based on the user mobile device data messaging capabilities.

Once the trigger system has captured a unique identifier capable of being mapped to the user mobile device address, a Mobile Terminated ("MT") message is sent to the user. From then on, the message application server is capable of future communications. The messages sent to the user can include menus and simple instructions removing the need for the user to ever originate a sophisticated MO message.

In one embodiment of the invention, said unique identifier is the mobile device address itself. In another embodiment of the invention, said unique identifier can be an identifier that is then used to retrieve the mobile device address. An exemplary embodiment uses an account number as the unique identifier, and then retrieving the mobile device address using the account number. The details on how the mobile device address is retrieved using the account number is well known to those skilled in the art. One possible implementation is to store the mobile device address in a database using the account number as the key to a data record holding the mobile device address. Other exemplary embodiments use a loyalty card number, a social security number, a membership number or employer number as the unique identifier.

This invention applies to any message oriented data communication system, including, but not limited to SMS, BMS, MMS, WAP, hypertext markup language ("HTML"), XHTML and other HTML derivatives, mobile e-mail, client side mobile device execution environments such as Java 2 Mobile Edition ("J2ME"), Brew™, Linux™, or Symbian OS™.

A further aspect of the invention, a system and method is also provided to deliver follow-on messages from the organization once the user mobile device address is captured.

A further aspect of the invention, a system and method is also provided to deliver, an instant mobile coupon, offer, or promotion that can be redeemed providing for a complete system and method to deliver messages, coupons, offers and promotion to users.

In one embodiment, the present solution is a network based system and method, consisting of a trigger system, a message application server and a mobile device service provider system. It allows any user equipped with a mobile device capable of receiving messages to initiate a sequence whereby said user can receive one or more messages from said message application server. Furthermore, said message application server can store said user mobile device address in a database for later communications from said message application server to said user.

The organization service is presented in a traditional media format, including but not limited to, on a print advertisement, on a product packaging, on a bill-board, on a poster, on a flyer, on a coaster, on a candy wrap, on a store display, in a TV ad, in a radio ad, on an Internet site. The presentation includes instructions on how the user can interact with the trigger system. The presentation is called the "call to action" message.

In one embodiment, the trigger system confirms the user mobile device address, handles exceptions, and optionally obtains additional data from the user or opt-in permission if applicable. Once the session with said trigger system is completed, the trigger system informs the message application server which sends a message to the user mobile device.

BRIEF DESCRIPTION OF THE DRAWINGS

The foregoing and other features of the present invention will be more readily apparent from the following detailed description and drawings of the illustrative embodiments of the invention in which:

6

FIGS. 1 and 1B depicts aspects of an exemplary embodiment of the present invention in accordance with the teachings presented herein.

FIG. 2 depicts an alternative exemplary embodiment of the present invention in accordance with the teachings presented herein containing additional components to deliver messages, coupons, offers or promotions.

FIG. 3 depicts an alternative exemplary embodiment of the present invention in accordance with the teachings presented herein containing additional components to track the redemption of coupons, offers or promotions.

FIG. 4 depicts an exemplary embodiment of delivering follow-on Mobile Terminated messages once the user mobile device address is known.

FIG. 5 is a functional block diagram of the method of capturing a user mobile device address and using it to send a message to the user.

FIG. 6 is a functional block diagram containing the additional steps to deliver messages, coupons, offers or promotions to a user.

FIG. 7 is a functional block diagram of an exemplary embodiment of coupons, offers or promotion redemption.

FIG. 8 is a functional block diagram to capture a user cell phone number in an embodiment of this invention where the trigger system is an IVR system.

FIG. 9 is a functional block diagram of an alternative exemplary embodiment using an IVR system as a trigger system containing the additional steps of verifying if the user calling number is a wireless phone number and capturing additional data.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Aspects, features and advantages of exemplary embodiments of the present invention will become better understood with regard to the following description in connection with the accompanying drawing(s). It should be apparent to those skilled in the art that the described embodiments of the present invention provided herein are illustrative only and not limiting, having been presented by way of example only. All features disclosed in this description may be replaced by alternative features serving the same or similar purpose, unless expressly stated otherwise. Therefore, numerous other embodiments of the modifications thereof are contemplated as falling within the scope of the present invention as defined herein and equivalents thereto. Hence, use of absolute terms, such as, for example, "will," "will not," "shall," "shall not," "must," and "must not," are not meant to limit the scope of the present invention as the embodiments disclosed herein are merely exemplary.

Turning to FIG. 1 there is shown the basic architecture of one embodiment of a system 10 for capturing a user mobile device address by means of a trigger system. The system comprises a trigger system 102 which can be triggered by a user 100 using a trigger device. Said trigger system 102 is connected by means of a data network 104 to a message application server 106. The message application server 106 is further connected to a mobile service provider or carrier system 110 by means of a data network 108 and the mobile service provider gateway 112. The mobile service provider gateway 112 acts as a gateway into the mobile service provider network 114. The mobile service provider gateway 112 is further capable of sending messages to the user 100 mobile device 116 by means of the service provider mobile network 114. Said user 100 can then read messages sent to his mobile device 116.

US 8,131,262 B2

7

The trigger system 102 is any system capable of capturing a unique identifier capable of being transformed into the user mobile device 116 messaging address, and optionally other data. The system described in this invention requires that the trigger system 102 or the message application server 106 be able to directly or indirectly retrieve the mobile device 116 address based on said unique identifier captured by the trigger system 102, and be able to use the mobile device address to send messages to the mobile device 116. Once the trigger system 102 is triggered by user 100, it sends said mobile device messaging address or said user unique identifier along with any other captured data to the message application server 106 by means of data network 104.

The trigger system 102 can be triggered by the user either by using his mobile device 116, or by using any other system or method.

In one exemplary embodiment of this invention, the trigger system is a computing device equipped with a card reader where the magnetic stripe of the card contains said unique identifier.

In one exemplary embodiment of this invention, the trigger system is a computing device equipped with a bar code reader. The user swipes an object with a bar code containing said unique identifier, such as a key chain card.

In one exemplary embodiment of this invention, the trigger system consists of Radio Frequency Identification ("RFID") readers located in public areas, for example at the doors of stores. The user carries an object with an embedded Radio Frequency Identification RFID tag containing said unique identifier. The trigger system is simply triggered by the user when walking through or near the RFID readers.

In one exemplary embodiment of this invention, the trigger system is a client application running on the user mobile device combined with a server side system. The communication is triggered when the user activates the application and instructs it to trigger the interaction. The client application, by means of the data messaging capabilities of the mobile device notifies the service side system, which can be the message application server, to initiate the communication.

In one exemplary embodiment of this invention, the trigger system is a client application running on the user mobile device combined with a local receiver system. The communication is triggered when the user activates the application and instructs it to trigger the interaction. The client then uses a local networking infrastructure such as infra red, Bluetooth®, WiFi or any other local wireless protocol to send the trigger to said receiver system which forwards it to the message application server.

In one exemplary embodiment of this invention the trigger system is any system capable of performing biometric or user identification of said user. Examples of such system include but is not limited to finger-print readers, eye readers, voice identification and video camera identification.

In one exemplary embodiment of this invention, the trigger system is a kiosk where the user enters the unique identifier in the kiosk—for example using a keyboard, a keypad or a touchscreen.

In one exemplary embodiment of this invention, the trigger system 102, is an IVR system accepting phone calls which is programmed to capture said unique identifier. Various techniques known to those of skill in the art can be used to capture said unique identifier. This includes but is not limited to accepting Dual Tone Multi Frequency ("DTMF") or using voice recognition. The user triggers an interaction with the system by calling a phone number mapping to the IVR system and entering at the prompt said unique identifier and any

8

additional data requested by the IVR. At the end of the call, all the captured information is forwarded to the message application server.

In one embodiment of this invention, the trigger system 102 is an IVR system and the mobile device 116 is a data enabled cell phone or any data device capable of receiving messages sent to a phone number address as described previously. In such embodiment, the IVR system can be further programmed to automatically capture the calling number. Capturing the calling number is very common in IVR systems using the Public Switch Telephone Network ("PSTN") Caller ID infrastructure. If the phone call is made using said cell phone, and the calling number is made available to the IVR, then the step of capturing the cell phone number can be further accelerated by spelling out the number and asking the user to validate the number. For example, the confirmation can be achieved using the following message: "You called from XXX-XXX-XXXX, if this is correct press 1, to enter a different phone number press 2". If the user confirms the number then the IVR can move on to capturing the optional data. If the user does not confirm the number, then the IVR can prompt the user for a new mobile device phone number. This last case is useful for example if the user called from a land based line and the IVR recognized the land line number. If the IVR does not receive the calling number from the PSTN, then the IVR system is programmed to directly prompt the user for his mobile device phone number.

In one exemplary embodiment, the trigger system 102 is wireless card attached to a computing device as described earlier. In the prior art section, we mentioned that wireless data cards suffer from scalability limitations. In this embodiment of the invention, the wireless data card is used only as a trigger system to receive the first MO message. All follow-on messages can then be sent to the user mobile device 116, using the mobile device 116 mobile service provider specific short code for this program. This invention overcomes the lack of standardized short codes in certain geographies and the lack of scalability of PC based wireless cards by using the wireless card only as a trigger system and not for subsequent message delivery. For example, the user would send an initial MO message to the wireless data card number, say NNN-NNN-NNNN which would be routed to the wireless data card using the carrier peer-to-peer infrastructure. The response from the message application server 106, would then use a separate service address for each carrier. Carrier A may use a five digit short code XXXXX, carrier B a six digit short code XXXXXX, and carrier C a normal ten digit number MMM-MMM-MMMM. When the user receives the message, he can easily reply back and the fact that each user may be using a different address because they have a different wireless carrier is not an issue.

In one exemplary embodiment, the trigger system 102 is a phone switch. The phone switch is connected to the PSTN SS7 network. Upon receiving a call establishment request, the phone switch would refuse such request, capture the user calling number and forward said caller number to the message application server 106. The advantage of this embodiment is that neither the user nor the organization is billed for the call, since it was not completed, and the organization does not incur an IVR cost. The downside is additional data cannot be captured on the user, and the end user experience is probably strange as the call is not accepted.

In another embodiment, the trigger system is a computing device where the user supplies her mobile device address connected to the message application server using a data network, including but not limited to the Internet. In another embodiment, the trigger system is a network accessible com-

US 8,131,262 B2

9

puting device that the user connects do using another device—for a example a web and WAP application accessed from a client computer using a browser—connected to the message application server using a data network.

The presented embodiments for the trigger system 102 are illustrative only and not limited to the ones presented. Numerous other embodiments of the trigger system 102 are contemplated as falling within the scope of this invention.

The data network 104 is any data network using any messaging protocol. In one exemplary embodiment, the network is based on TCP/IP and the trigger system 102 forwards the unique identifier and optional data using a Web Service call based on the Simple Object Access Protocol ("SOAP").

The message application server 106 is any computing server designed to process messages. It is programmed to be able to execute instructions upon receiving incoming messages from mobile devices, such as mobile device 116, and from any other external source. One of the instructions that the message application server is capable of executing is sending messages out to mobile devices. One of the event requests capable of triggering the message application server 106 to execute said instructions is the receipt of a notification that a user triggered the trigger device 102.

In one exemplary embodiment, the message application server 106 is implemented as a cluster of Java 2 Enterprise Edition ("J2EE™") components running on commonly available computer hardware running commonly available operating systems. In one exemplary embodiment, the message application server 106 is implemented using the Jboss™ Java application server and uses an Oracle® database to maintain persistent data. In one exemplary embodiment the dialog instructions to execute upon receiving an MO message or a trigger requests are implemented in one or more extensible markup language ("XML") document(s). Multiple other embodiments of the message application server are possible and known to those of skill in the art.

In one preferred embodiment, the message application server 106 is additionally connected to a message application database 120. The database can be used as part of the implementation of the message application server. In one exemplary embodiment, the database stores data on the active communication programs, including but not limited to, program data; user data; user session data; system logs. The usage of a database to implement sophisticated server applications is well known to those of skill in the art and many possible usage of the database is possible and within the scope of this invention.

The message application server 106 is connected to one or more service provider gateway 112 using any suitable data network 108. In an exemplary implementation, the data network is the Internet using a virtual private network ("VPN") using the short message peer-to-peer ("SMPP") protocol. Other exemplary implementations use the Internet without a VPN, use private TCP/IP based connections ("leased line"), or use a dedicated X.25 connection or any other available data network and protocol. The message application server 106 can simultaneously support multiple mobile service providers systems 110 and mobile device 116 technologies and hence can be connected to multiple service providers systems 110. The message application server 106 can be similarly connected a plurality of trigger system 102.

The message application server 106 can send, and optionally receive, messages to and from the mobile device 116, by means of the mobile service provider system 110. The actual details of the mobile service provider infrastructure are not relevant to this present invention and in practice take many forms.

10

In one exemplary embodiment, the mobile provider system 110 is broken down into a mobile service provider gateway 112 responsible for interfacing with the message application server 106 by means of data network 108. Using methods known to those skilled in the art, messages can be exchanged between mobile devices, such as mobile device 116 and the mobile service provider gateway 112 by means of a mobile network 114.

The mobile device 116 is any device a user can carry along with him that is capable of receiving data messages from at least the message application server 106 by means of the service provider system 110. In general, the mobile device 116 is also capable of sending messages to the message application server 106 as well as being able to send and receive messages to other mobile devices and other service applications. More capable devices can also send messages, or send and receive more complex messages than text messages such as multi-media messages.

In one embodiment of the invention, the mobile device 116 is a data enabled cell phone, or any data device capable of receiving and sending messages sent to a phone number address. The later can include wireless enabled personal data assistants ("PDA") or any other computing device capable of receiving messages sent to a phone number.

In one exemplary embodiment of the invention, the mobile device 116 is a data capable device capable of receiving and sending messages using e-mail protocols, including but not limited to SMTP, Post Office Protocol ("POP") and Internet Message Access Protocol ("IMAP").

In one exemplary embodiment of this invention, the mobile device 116 is a data capable device capable of receiving and sending messages using a client application that uses a data network, including but not limited to the Internet protocol ("IP"). The mobile device can use any IP transport, including but not limited to 801.11, 801.11a, 801.11b, 801.11g and Wifi.

In one exemplary embodiment of the invention, the mobile device 116 is a data capable device capable of receiving and sending messages using an instant messaging protocol. Examples of instant messaging service provide include, but is not limited to, AOL Instant Messenger™, Yahoo!® Messenger, MSN® Messenger, Jabber® and other similar protocols.

Turning to FIG. 2 there is shown a block diagram of an embodiment of the invention further comprising components to deliver coupons, offers and promotions to the user. The message application server 106 is further connected to an offer application 122. The offer application 122 is connected to an offer database 124.

The offer application 122 is responsible for selecting and creating coupons, offers and promotions for said user 100. The coupon, offer or promotion is part of the message that will be sent to the user device 116 as described above.

In one embodiment, the coupons, offers and promotions are implemented using an offer message. In a preferred embodiment, the coupons, offers and promotions are implemented using an offer code and an offer message. In one exemplary embodiment, the coupon and promotion offers are represented by numerical codes. In one exemplary embodiment, the coupons and promotion offers are represented by alphanumeric codes. In one embodiment, the coupons, offers and promotions are implemented using data, including but not limited to text data, XML data and binary data, which is interpreted by an application running on said user mobile device 116. In one exemplary embodiment, the coupons and promotion offers are represented by graphical images—including bar codes.

US 8,131,262 B2

11

In one exemplary embodiment each user receives the same coupon, offer or promotion code. In another exemplary embodiment, each coupon, offer or promotion code is unique and encodes the coupon, offer or promotion and a user identification. In one exemplary embodiment, the user identification is a sequence number, a short 3-5 digit sequence, allowing the encoding of 1000-100,000 unique users. Each time a user triggers the system and a message, coupon, offer or promotion is generated, a new sequence number is generated and stored in the offer database with the generated offer. At redemption time, the sequence number is extracted from the offer code and the most recent offer with the same offer and sequence number is matched. The benefit of this exemplary embodiment is to keep the unique identifier short in the common case that the code is manually entered at redemption time. In most retail environments, the speed of customer checkout is critical and the more digits need to be entered, the longer it takes to capture the message, coupon, offer or promotion code and the more likely an input error will be made.

In one preferred embodiment, the message, coupon, offer or promotion code includes a checksum digit, using any of the well known checksum algorithms, including but not limited to the mod 10 algorithm used in credit card numbers, whereby invalid coupon, offer or promotion codes due to input errors can be determined.

These various embodiments of coupons and promotion offers are illustrative only and not limiting, therefore numerous other embodiments of coupons, offers and promotions on mobile devices fall within the scope of this invention.

The offer database 124 is used by the offer application 122 to store available offers, to maintain user profile information concerning coupons, offers and promotions, to maintain logs of created offers. The usage of database to implement sophisticated server applications is well known to those of skill in the art and many possible usage of the database is possible and within the scope of this invention.

In one preferred embodiment, the offer application 122 is connected to an external system 125 comprising enterprise systems, customer relationship management ("CRM") systems or loyalty systems that are involved in the generation, redemption and analysis of the offers.

Internal details of the offer application and the coupon, offer and promotion codes is not discussed in further details as they are known to those skilled in the art. Couponing and all the issues around generating coupons, matching coupons to users based on multiple parameters including past interaction and demographic data is a well established industry. All these couponing techniques apply to the coupon generation and fall into the scope of this invention.

Turning to FIG. 3 there is shown a block diagram of an embodiment of the invention further comprising components to track the redemption of coupons, offers or promotions. The system further comprises above FIG. 2, an offer entry system 130 used to validate and capture coupons, offers, and promotions redemption. The offer entry device 130 is connected to the offer application 122 by means of a data network 132. Optionally, an external system 121 or 125 interfaces with either the message application server, the offer application or both.

In one embodiment, the offer entry system validates the coupon, offer or promotion code. In one embodiment, the offer entry system captures the coupon, offer or promotion redemption for storage in the offer database 124. In one preferred embodiment, the offer entry system validates and captures the coupon, offer or promotion code for storage in the offer database 124.

12

In one preferred embodiment, the offer entry system 130 is a computing device located where the coupon, offer or promotion is redeemed. The coupon, offer or promotion code is entered at redemption time. In this preferred embodiment the coupon, offer or promotion code is validated in real-time by checking the code on the offer entry system 130 (for example the offer code can contain a checksum that is verified), then by sending a request by means of data network 132 to the offer application 122, that verifies the coupon, offer or promotion code. In this exemplary embodiment, redemption data can be analyzed by the offer server 122 and reports 134 created.

In one preferred embodiment, the offer entry system is a point of sale ("POS") terminal programmed to implement the logic described above. If the coupon, offer or promotion code is validated in real-time preventing fraud and providing for duplicate checking, it is possible to offer valuable coupons, offers and promotions that otherwise might not be economical to provide without such checks.

In an exemplary embodiment, the offer entry system 130 is a stand-alone computing device, for example a kiosk. The user enters the coupon, offer or promotion code in the offer entry system 130, and the offer entry system prints out a paper coupon. The user can then redeem the paper coupon like regular paper coupons. In an exemplary embodiment, the offer entry system 130 locally stores each redemption, and the data can be uploaded on a regular basis, by means of a data network 132 to the offer application 122. In an exemplary embodiment the offer entry device 130 is equipped with removable storage. On a regular basis the removable storage is replaced and the content is read on a compatible device and the data uploaded to the offer application 122.

In one exemplary embodiment, the coupon, offer or promotion code has the same format as a payment number like a credit card number. The existing payment processing infrastructure is used to authorize and capture coupon redemption. The operator of the system described in this invention would request a unique bank id prefix to distinguish its offer numbers from credit or payment card numbers. In one exemplary embodiment, said payment processing infrastructure is configured to track coupon, offer and promotion redemption and credit the user for his coupon, offer and promotion.

The data network 132 is any data network or any means using any messaging protocol or data representation not necessarily always connected allowing for the transfer of data, in real-time or in batch mode, from the offer entry device 130 to the offer application 122. In one preferred embodiment, the network is based on the Internet Protocol.

Turning to FIG. 4 there is shown a block diagram of an embodiment of the invention illustrating how follow-on messages can be sent at later dates to said user 100. Messages, coupons, offers and promotions are delivered immediately upon the user activating the trigger system 102. But the organization, can also decide to send further messages, coupons, offers and promotions to users that have participated previously. Under this scenario, during the initial communication, the message application server 106, or the offer server 122 stores the mobile device 116 address. At a later date, when the organization wants to push out new messages, coupons, offers or promotions, the list of users that have participated is looked up. If the message includes a coupon, offer or promotion, it may be looked up by the offer application 122 using a mechanism similar to the one described above. The push message is then delivered to the user using the same system and method described earlier.

FIG. 5 illustrates the basic steps of the invention. In a typical usage of the invention, the user 100 is encouraged to trigger the system by a "call to action" message presented in

US 8,131,262 B2

13

a traditional media format. The trigger system 102, upon being triggered (step 200) is designed to capture (step 202) the unique identifier capable of identifying the user mobile device 116, and optionally other data. The captured data is then forwarded (step 204) to the message application server 106. The message application server 106 then retrieves (step 206) the mobile device address of the user based on the unique identifier. The message application server 106 then executes (step 208) a programmed set of instructions whereby an appropriate response message is generated. Optionally, in step 210, all the forwarded data, and any additional data generated by the execution of the instructions in step 208 are saved in the message application database 120. The response message is then forwarded to the mobile service provider gateway 112 in step 212, for delivery to the mobile device 116 by the mobile service provider. Said user can then read said response message on said mobile device 116 in step 214.

In an alternative embodiment, step 206 is not performed in the message application server 106, but instead in the trigger system 102, and either the mobile address or both the mobile address and the unique identifier are forwarded to the message application server in step 204.

FIG. 6 illustrates the basic steps of the invention described in FIG. 5 augmented by the delivery of a coupon, offer or promotion. The trigger steps 200, 202, 204 and 206 are the same as in FIG. 5. Instead of directly generating the response message in the message application server 106, all the user data available in the message application server including the unique identifier, the mobile device address, the optional user data is forwarded to the offer application 122 (step 220). Based on all the available data, the offer server 122 generates an offer (step 222). The generated offer and any other user data is stored in the offer database 124 (step 224). The response message containing the coupon, offer or promotion is forwarded back to the message application server 106 for delivery to the mobile device 116 (step 226). The message delivery steps 210, 212 and 214 are the same as in FIG. 5. Later on the user will redeem the coupon, offer or promotion message, for example in a store. The coupon, offer or promotion being redeemed is entered (step 228) in the offer entry system 130. Either in real-time or in batch the redemption data is forwarded to the offer application 122 (step 230). The redemption data is then stored in (step 232) in the offer database 124. Based on the data stored in step 224 and step 232 in the offer database 124, reports 134 can be generated that show redemption rates from which the effectiveness of the promotion can be measured.

FIG. 7 illustrates another preferred embodiment, where the coupon, offer or promotion is verified after step 228, by interrogating the offer application 122. Started from step 214 of FIG. 6, the offer is entered in the offer entry system 130 in step 228. The offer is then forwarded to the offer application 122 for verification by means of data network 132 (step 240). The offer is verified by the offer application 122 (that is the offer application verifies it's a valid offer, and has not been already redeemed if duplicate checking is configured) (step 242). If the offer is valid, then the redemption proceeds (246) and the following steps are the same as in FIG. 6. If the offer is invalid, the status is made available to the offer entry device 130 (step 244). In the case of an invalid offer, the offer may be re-entered since the offer may have been rejected due to an input error. If the offer has already been redeemed, there is no benefit in re-entering the offer.

FIG. 8 illustrates step 202 in an exemplary embodiment where the trigger system 102 is implemented using an IVR system. The user calls the IVR number. The PSTN delivers the call to the IVR system in step 300. The IVR system is then

14

programmed to retrieve the user calling number, using the PSTN caller id support (step 302). If the user calling number is available, the system spells out the number to the user and asks for a confirmation in step 306. If the user confirms positively, the user calling number is then forwarded to the message application server 106 as described in step 204. If the user confirms negatively (step 306), or the IVR system does not detect the user calling number in step 302 (for example if the user is blocking caller id), then the IVR is programmed (step 304) to ask the user to enter his cell phone number. The phone number can either be entered using the telephone key pad, and the IVR system will detect the Dual Tone Multiple Frequency ("DTMF") tones, or alternatively using a voice recognition system. The details on how to program an IVR system to perform the steps described above are well known to those skilled in the art.

FIG. 9 is an alternative embodiment of step 202 that builds upon FIG. 7. In FIG. 8 the initial steps 300, and 302 are the same as in FIG. 8. The calling number supplied by the PSTN, or entered by the user is analyzed in step 320 to see if it corresponds to a cell phone number. There are multiple ways to perform this operation which are known to those skilled in the art. One possible implementation is to lookup the first six digits of the phone number in a database called the Local Exchange Routing Guide ("LERG") that contains information on all the PSTN switches. If the phone number corresponds to a cell phone number, the IVR is programmed to proceed to step 306. If the number does not correspond to a cell phone number, then the IVR is programmed in step 304 to prompt for a cell phone number as described before. In this alternative embodiment, step 322 was also added prompting the user for additional data, for example for a choice of an offer of interest or from a store of interest. Once all the additional data is captured, the user cell phone and the additional data is forwarded to the message application server 106 as described in step 204.

Having now described one or more exemplary embodiments of the invention, it should be apparent to those skilled in the art that the foregoing is illustrative only and not limiting, having been presented by way of example only. All the features disclosed in this specification (including any accompanying claims, abstract, and drawings) may be replaced by alternative features serving the same purpose, and equivalents or similar purpose, unless expressly stated otherwise. Therefore, numerous other embodiments of the modifications thereof are contemplated as falling within the scope of the present invention as defined by the appended claims and equivalents thereto.

For example, the techniques may be implemented in hardware or software, or a combination of the two. In one embodiment, the techniques are implemented in computer programs executing on programmable computers that each include a processor, a storage medium readable by the processor (including volatile and non-volatile memory and/or storage elements), at least one input device and one or more output devices. Program code is applied to data entered using the input device to perform the functions described and to generate output information. The output information is applied to one or more output devices.

Each program may be implemented in a high level procedural or object oriented programming language to communicate with a computer system, however, the programs can be implemented in assembly or machine language, if desired. In any case, the language may be a compiled or interpreted language.

Each such computer program may be stored on a storage medium or device (e.g., CD-ROM, hard disk or magnetic

US 8,131,262 B2

15

diskette) that is readable by a general or special purpose programmable computer for configuring and operating the computer when the storage medium or device is read by the computer to perform the procedures described in this document. The system may also be considered to be implemented as a computer-readable storage medium, configured with a computer program, where the storage medium so configured causes a computer to operate in a specific and predefined manner.

In a most preferred embodiment, the various components, such as the trigger system, the message application server, the offer application, etc., are implemented on one or more computer systems. The multiplicity of the computer system allow for the distribution of the workload in accordance with, e.g., the number of computer systems available and enables the system to function even is a subset of the computer systems experience one or more faults. The computers should be connectable to each other, for example, by means of 100 Base-T Ethernet interfaces and corresponding 100 Base-T Ethernet switches. In the most preferred implementation, each computer contains dual UltraSPARC® III processors, 1024 MB RAM, two 9 GB disk drives, and operates using the Unix™ compatible Solaris™ operating system. As will be appreciated, the specific hardware utilized can be varied in accordance with need, required capacity, and the preferred programming and operating environment, as well as in response to other factors.

What is claimed is:

1. A system for enabling targeted content delivery to a mobile device user, said mobile device having a device address, said device address having associated therewith at least one unique identifier, said system comprising:
 - a message application server; and
 - a trigger system in communication with said message application server, said trigger system comprising:
 - a trigger client component configured to generate a trigger signal comprising a trigger action, user content request data and said at least one unique identifier;
 - a trigger server component in communication with said trigger client component, said trigger server component configured to:
 - receive said trigger signal,
 - send to said message application server said trigger signal for processing by said message application server;
- wherein said message application server is configured to:
 - receive from said trigger system said trigger signal, and in response thereto:
 - derive said mobile device address from said at least one unique identifier,
 - generate content based on said user request data, and send said generated content to said device address of said mobile device,
- wherein said generated content comprises one or more graphical images representing a promotional offer.
2. A system as in claim 1 wherein said message application server further includes a message application database for storing transaction information comprising said user request data and said device address.
3. A system as in claim 1 wherein said trigger client component is said mobile device.

16

4. A system as in claim 1 wherein said trigger system comprises:

- a client application residing on said trigger client component for generating said trigger signal; and
- a server application residing on said trigger server component in communication with said client application and said message application server, said server application for receiving and processing said trigger signal sent by said client application.

5. A system as in claim 4 wherein said client application is a WEB or WAP browser client component and said server application is a WEB or WAP server application component.

6. A system as in claim 1, wherein said trigger client component further comprises at least one input device.

7. A system as in claim 6, wherein said at least one input device is selected from the group consisting of a magnetic card reader, bar code reader, keyboard, keypad, touch pad, sensors, and any combination thereof.

8. A system as in claim 7, wherein said sensors include a wireless sensor and a biometric sensor.

9. A system as in claim 1 wherein said trigger client component is an account card and a reader and wherein said trigger signal is generated by swiping said account card through said reader and having said trigger system identify said unique identifier based on account card information.

10. A system as in claim 1, wherein said trigger system comprises an IVR system, said mobile device is a cellular phone, said device address is a cellular phone number and said trigger action is a voice call; said IVR system configured to process said trigger signal to acquire said cellular phone number of said cellular phone.

11. system as in claim 1, wherein said trigger system comprises a PSTN and a Phone Switch connected to said PSTN, said mobile device is a cellular phone, said mobile device address is a cellular phone number and said trigger action is a voice call;

said trigger system configured to detect incoming call establishment requests from said PSTN and to process said trigger signal to acquire said cellular phone number of said cellular phone.

12. A system as in claim 1 wherein said mobile device is a network-enabled device.

13. A system as in claim 1 wherein said mobile device is a cellular phone having a cellular phone number as said device address.

14. A system as in claim 1 wherein said device address is a calling number, a cellular phone number, an instant messaging address, an e-mail address or other addressing type.

15. A system as in claim 1 further comprising:

- an offer application component;
- an offer entry system in communication with said offer application component, and
- an offer database in communication with said offer application component for storing said generated content and said user request data, wherein said offer entry system is configured to:

- redeem said generated content,
- generate content redemption information comprising said redeemed content, and

US 8,131,262 B2

17

send said content redemption information to said offer application component for storage in said offer database.

16. A system as in claim 15, wherein said offer application component is further configured to:

receive said content redemption information and
check for and process valid redeemed content using a validation code.

17. A system as in claim 16 wherein said offer entry system is further configured to generate a physical representation of said generated content.

18

18. A system as in claim 17 wherein said physical representation of said generated content includes paper, cardstock, plastic or any other tangible medium.

19. A system as in claim 18 wherein said offer entry system is a point of sale (POS) terminal for redeeming and providing a physical representation of said generated content.

20. A system as in claim 18 wherein said offer entry system is a kiosk for redeeming and providing a physical representation of said generated content.

* * * * *

**UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA**

NOTICE OF ASSIGNMENT TO UNITED STATES MAGISTRATE JUDGE FOR DISCOVERY

This case has been assigned to District Judge Christina A. Snyder and the assigned discovery Magistrate Judge is Margaret A. Nagle.

The case number on all documents filed with the Court should read as follows:

CV12- 8624 CAS (MANx)

Pursuant to General Order 05-07 of the United States District Court for the Central District of California, the Magistrate Judge has been designated to hear discovery related motions.

All discovery related motions should be noticed on the calendar of the Magistrate Judge

=====

NOTICE TO COUNSEL

A copy of this notice must be served with the summons and complaint on all defendants (if a removal action is filed, a copy of this notice must be served on all plaintiffs).

Subsequent documents must be filed at the following location:

☒ **Western Division**
312 N. Spring St., Rm. G-8
Los Angeles, CA 90012

☐ **Southern Division**
411 West Fourth St., Rm. 1-053
Santa Ana, CA 92701-4516

☐ **Eastern Division**
3470 Twelfth St., Rm. 134
Riverside, CA 92501

Failure to file at the proper location will result in your documents being returned to you.

Alan Sege (Bar No. 177350)
 ALAN SEGE, ESQ. PC
 6601 Center Drive W, Suite 700
 Los Angeles, California 90045
 Tel: (310) 957-3301

UNITED STATES DISTRICT COURT
 CENTRAL DISTRICT OF CALIFORNIA

m-QUBE, Inc., a Delaware Corporation

PLAINTIFF(S)

v.

DELTA AIRLINES, INC., a Delaware Corporation

DEFENDANT(S).

CASE NUMBER

CV12-08624 CAS(MANU)

SUMMONS

TO: DEFENDANT(S):

A lawsuit has been filed against you.

Within 21 days after service of this summons on you (not counting the day you received it), you must serve on the plaintiff an answer to the attached ☒ complaint ☐ amended complaint ☐ counterclaim ☐ cross-claim or a motion under Rule 12 of the Federal Rules of Civil Procedure. The answer or motion must be served on the plaintiff's attorney, Alan Sege, whose address is 6601 Center Drive W, Suite 700, Los Angeles, California 90045. If you fail to do so, judgment by default will be entered against you for the relief demanded in the complaint. You also must file your answer or motion with the court.

OCT - 9 2012

Clerk, U.S. District Court

Dated: _____

By: _____

Deputy Clerk

(Seal of the Court)

[Use 60 days if the defendant is the United States or a United States agency, or is an officer or employee of the United States. Allowed 60 days by Rule 12(a)(3)].

COPY

Alan Sege (Bar No. 177350)
 ALAN SEGE, ESQ. PC
 6601 Center Drive W, Suite 700
 Los Angeles, California 90045
 Tel: (310) 957-3301

**UNITED STATES DISTRICT COURT
 CENTRAL DISTRICT OF CALIFORNIA**

m-QUBE, Inc., a Delaware Corporation

PLAINTIFF(S)

v.

DELTA AIRLINES, INC., a Delaware Corporation

DEFENDANT(S).

CASE NUMBER

CV12-08624

(AS(NANX))

SUMMONS

TO: DEFENDANT(S):

A lawsuit has been filed against you.

Within 21 days after service of this summons on you (not counting the day you received it), you must serve on the plaintiff an answer to the attached ☒ complaint ☐ amended complaint ☐ counterclaim ☐ cross-claim or a motion under Rule 12 of the Federal Rules of Civil Procedure. The answer or motion must be served on the plaintiff's attorney, Alan Sege, whose address is 6601 Center Drive W, Suite 700, Los Angeles, California 90045. If you fail to do so, judgment by default will be entered against you for the relief demanded in the complaint. You also must file your answer or motion with the court.

OCT - 9 2012

Dated: _____

Clerk, U.S. District Court

JULIE PRADO

By: _____

Deputy Clerk

(Seal of the Court)



[Use 60 days if the defendant is the United States or a United States agency, or is an officer or employee of the United States. Allowed 60 days by Rule 12(a)(3)].

COPY

UNITED STATES DISTRICT COURT, CENTRAL DISTRICT OF CALIFORNIA
CIVIL COVER SHEETI (a) PLAINTIFFS (Check box if you are representing yourself ☐)
m-QUIBE, INC., a Delaware CorporationDEFENDANTS
DELTA AIRLINES, INC., a Delaware Corporation

(b) Attorneys (Firm Name, Address and Telephone Number. If you are representing yourself, provide same.)

Alan Sege (Bar No. 177350)

ALAN SEGE, ESQ. PC

6601 Center Drive W, Suite 700, Los Angeles, CA 90045, Tel: (310) 957-3301

Attorneys (If Known)

II. BASIS OF JURISDICTION (Place an X in one box only.)

☐ 1 U.S. Government Plaintiff ☒ 3 Federal Question (U.S. Government Not a Party)☐ 2 U.S. Government Defendant ☐ 4 Diversity (Indicate Citizenship of Parties in Item III)III. CITIZENSHIP OF PRINCIPAL PARTIES - For Diversity Cases Only
(Place an X in one box for plaintiff and one for defendant.)

Citizen of This State

Citizen of Another State

Citizen or Subject of a Foreign Country

PTF DEF

☐ 1 ☐ 1

Incorporated or Principal Place of Business in this State

☐ 2 ☐ 2

Incorporated and Principal Place of Business in Another State

☐ 3 ☐ 3

Foreign Nation

PTF DEF

☐ 4 ☐ 4☐ 5 ☐ 5☐ 6 ☐ 6

IV. ORIGIN (Place an X in one box only.)

☒ 1 Original Proceeding☐ 2 Removed from State Court☐ 3 Remanded from Appellate Court☐ 4 Reinstated or Reopened☐ 5 Transferred from another district (specify):☐ 6 Multi-District Litigation☐ 7 Appeal to District Judge from Magistrate JudgeV. REQUESTED IN COMPLAINT: JURY DEMAND: ☒ Yes ☐ No (Check 'Yes' only if demanded in complaint.)CLASS ACTION under F.R.C.P. 23: ☐ Yes ☒ No

MONEY DEMANDED IN COMPLAINT: \$

VI. CAUSE OF ACTION (Cite the U.S. Civil Statute under which you are filing and write a brief statement of cause. Do not cite jurisdictional statutes unless diversity.)
Patent Infringement under 35 U.S.C. Section 100, et seq. and 35 U.S.C. Section 271(a) (b) and (c)

VII. NATURE OF SUIT (Place an X in one box only.)

OTHER STATUTES	CONTRACT	TORTS	TORTS	PRISONER, PETITIONS	LABOR
<input type="checkbox"/> 400 State Reapportionment	<input type="checkbox"/> 110 Insurance	<input type="checkbox"/> 310 Airplane	<input type="checkbox"/> 370 Other Fraud	<input type="checkbox"/> 510 Motions to Vacate Sentence	<input type="checkbox"/> 710 Fair Labor Standards Act
<input type="checkbox"/> 410 Antitrust	<input type="checkbox"/> 120 Marine	<input type="checkbox"/> 315 Airplane Product Liability	<input type="checkbox"/> 371 Truth in Lending	<input type="checkbox"/> 530 Habeas Corpus General	<input type="checkbox"/> 720 Labor/Mgmt. Relations
<input type="checkbox"/> 430 Banks and Banking	<input type="checkbox"/> 130 Miller Act	<input type="checkbox"/> 320 Assault, Libel & Slander	<input type="checkbox"/> 380 Other Personal Property Damage	<input type="checkbox"/> 535 Death Penalty	<input type="checkbox"/> 730 Labor/Mgmt. Reporting & Disclosure Act
<input type="checkbox"/> 450 Commerce/ICC Rates etc.	<input type="checkbox"/> 140 Negotiable Instrument	<input type="checkbox"/> 330 Fed. Employers' Liability	<input type="checkbox"/> 385 Property Damage Product Liability	<input type="checkbox"/> 540 Mandamus Other	<input type="checkbox"/> 740 Railway Labor Act
<input type="checkbox"/> 460 Deportation	<input type="checkbox"/> 150 Recovery of Overpayment & Enforcement of Judgment	<input type="checkbox"/> 340 Marine	<input type="checkbox"/> 422 Appeal 28 USC 158	<input type="checkbox"/> 550 Civil Rights	<input type="checkbox"/> 790 Other Labor Litigation
<input type="checkbox"/> 470 Racketeer Influenced and Corrupt Organizations	<input type="checkbox"/> 151 Medicare Act	<input type="checkbox"/> 345 Marine Product Liability	<input type="checkbox"/> 423 Withdrawal 28 USC 157	<input type="checkbox"/> 555 Prison Condition	<input type="checkbox"/> 791 Empl. Ret. Inc. Security Act
<input type="checkbox"/> 480 Consumer Credit	<input type="checkbox"/> 152 Recovery of Defaulted Student Loan (Excl. Veterans)	<input type="checkbox"/> 350 Motor Vehicle	<input type="checkbox"/> 441 Voting	<input type="checkbox"/> 610 Agriculture	<input type="checkbox"/> 820 Copyrights
<input type="checkbox"/> 490 Cable/Sat TV	<input type="checkbox"/> 153 Recovery of Overpayment of Veteran's Benefits	<input type="checkbox"/> 355 Motor Vehicle Product Liability	<input type="checkbox"/> 442 Employment	<input type="checkbox"/> 620 Other Food & Drug	<input checked="" type="checkbox"/> 830 Patent
<input type="checkbox"/> 810 Selective Service	<input type="checkbox"/> 160 Stockholders' Suits	<input type="checkbox"/> 360 Other Personal Injury	<input type="checkbox"/> 443 Housing/Accommodations	<input type="checkbox"/> 625 Drug Related Seizure of Property 21 USC 881	<input type="checkbox"/> 840 Trademark
<input type="checkbox"/> 850 Securities/Commodities Exchange	<input type="checkbox"/> 190 Other Contract	<input type="checkbox"/> 362 Personal Injury-Med Malpractice	<input type="checkbox"/> 444 Welfare	<input type="checkbox"/> 630 Liquor Laws	<input type="checkbox"/> 861 HIA (1395ff)
<input type="checkbox"/> 875 Customer Challenge 12 USC 3410	<input type="checkbox"/> 195 Contract Product Liability	<input type="checkbox"/> 365 Personal Injury-Product Liability	<input type="checkbox"/> 445 American with Disabilities - Employment	<input type="checkbox"/> 640 R.R. & Truck	<input type="checkbox"/> 862 Black Lung (923)
<input type="checkbox"/> 890 Other Statutory Actions	<input type="checkbox"/> 196 Franchise	<input type="checkbox"/> 368 Asbestos Personal Injury Product Liability	<input type="checkbox"/> 446 American with Disabilities - Other	<input type="checkbox"/> 650 Airline Regs	<input type="checkbox"/> 863 DIWC/DIWW (405(g))
<input type="checkbox"/> 891 Agricultural Act	<input type="checkbox"/> 210 Land Condemnation	<input type="checkbox"/> 462 Naturalization Application	<input type="checkbox"/> 440 Other Civil Rights	<input type="checkbox"/> 660 Occupational Safety/Health	<input type="checkbox"/> 864 SSID Title XVI
<input type="checkbox"/> 892 Economic Stabilization Act	<input type="checkbox"/> 220 Foreclosure	<input type="checkbox"/> 463 Habeas Corpus-Alien Detainee		<input type="checkbox"/> 690 Other	<input type="checkbox"/> 865 RSI (405(g))
<input type="checkbox"/> 893 Environmental Matters	<input type="checkbox"/> 230 Rent Lease & Ejectment	<input type="checkbox"/> 465 Other Immigration Actions			<input type="checkbox"/> 870 Taxes (U.S. Plaintiff or Defendant)
<input type="checkbox"/> 894 Energy Allocation Act	<input type="checkbox"/> 240 Torts to Land				<input type="checkbox"/> 871 IRS-Third Party 26 USC 7609
<input type="checkbox"/> 895 Freedom of Info. Act	<input type="checkbox"/> 245 Tort Product Liability				
<input type="checkbox"/> 900 Appeal of Fee Determination Under Equal Access to Justice	<input type="checkbox"/> 290 All Other Real Property				
<input type="checkbox"/> 950 Constitutionality of State Statutes					

CV12-08624

FOR OFFICE USE ONLY: Case Number: _____

AFTER COMPLETING THE FRONT SIDE OF FORM CV-71, COMPLETE THE INFORMATION REQUESTED BELOW.

UNITED STATES DISTRICT COURT, CENTRAL DISTRICT OF CALIFORNIA
CIVIL COVER SHEET

VIII(a). **IDENTICAL CASES:** Has this action been previously filed in this court and dismissed, remanded or closed? ☐ No ☒ Yes
 If yes, list case number(s): CV12 04227 JAK AJWx

VIII(b). **RELATED CASES:** Have any cases been previously filed in this court that are related to the present case? ☐ No ☒ Yes
 If yes, list case number(s): CV12 04227 JAK AJWx

Civil cases are deemed related if a previously filed case and the present case:

- (Check all boxes that apply) ☒ A. Arise from the same or closely related transactions, happenings, or events; or
☒ B. Call for determination of the same or substantially related or similar questions of law and fact; or
☐ C. For other reasons would entail substantial duplication of labor if heard by different judges; or
☒ D. Involve the same patent, trademark or copyright, and one of the factors identified above in a, b or c also is present.

IX. **VENUE:** (When completing the following information, use an additional sheet if necessary.)

- (a) List the County in this District; California County outside of this District; State if other than California; or Foreign Country, in which EACH named plaintiff resides.
☐ Check here if the government, its agencies or employees is a named plaintiff. If this box is checked, go to item (b).

County in this District:*	California County outside of this District; State, if other than California; or Foreign Country
Los Angeles	

- (b) List the County in this District; California County outside of this District; State if other than California; or Foreign Country, in which EACH named defendant resides.
☐ Check here if the government, its agencies or employees is a named defendant. If this box is checked, go to item (c).

County in this District:*	California County outside of this District; State, if other than California; or Foreign Country
Los Angeles	

- (c) List the County in this District; California County outside of this District; State if other than California; or Foreign Country, in which EACH claim arose.
 Note: In land condemnation cases, use the location of the tract of land involved.

County in this District:*	California County outside of this District; State, if other than California; or Foreign Country
Los Angeles	

* Los Angeles, Orange, San Bernardino, Riverside, Ventura, Santa Barbara, or San Luis Obispo Counties

Note: In land condemnation cases, use the location of the tract of land involved.

X. **SIGNATURE OF ATTORNEY (OR PRO PER):**  Date October 9, 2012

Notice to Counsel/Parties: The CV-71 (JS-44) Civil Cover Sheet and the information contained herein neither replace nor supplement the filing and service of pleadings or other papers as required by law. This form, approved by the Judicial Conference of the United States in September 1974, is required pursuant to Local Rule 3-1 is not filed but is used by the Clerk of the Court for the purpose of statistics, venue and initiating the civil docket sheet. (For more detailed instructions, see separate instructions sheet.)

Key to Statistical codes relating to Social Security Cases:

Nature of Suit Code	Abbreviation	Substantive Statement of Cause of Action
861	HIA	All claims for health insurance benefits (Medicare) under Title 18, Part A, of the Social Security Act, as amended. Also, include claims by hospitals, skilled nursing facilities, etc., for certification as providers of services under the program. (42 U.S.C. 1935FF(b))
862	BL	All claims for "Black Lung" benefits under Title 4, Part B, of the Federal Coal Mine Health and Safety Act of 1969. (30 U.S.C. 923)
863	DIWC	All claims filed by insured workers for disability insurance benefits under Title 2 of the Social Security Act, as amended; plus all claims filed for child's insurance benefits based on disability. (42 U.S.C. 405(g))
863	DIWW	All claims filed for widows or widowers insurance benefits based on disability under Title 2 of the Social Security Act, as amended. (42 U.S.C. 405(g))
864	SSID	All claims for supplemental security income payments based upon disability filed under Title 16 of the Social Security Act, as amended.
865	RSI	All claims for retirement (old age) and survivors benefits under Title 2 of the Social Security Act, as amended. (42 U.S.C. (g))